Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 40: September 30 – October 6, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- During Week 40, a total of 64 laboratory-positive[3] influenza cases (44 influenza A and 20 influenza B) were reported. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 40. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 40 (Figure 6).
- Influenza-like illness (ILI) activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.11% (Figure 5) and 1.22% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 40.[5]
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 40.
- National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 40**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 40**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 40 (September 30, 2018 - October 6, 2018)*

Influenza Type	Week 40	2018-2019* Season-to-Date
Influenza A	44	44
Influenza B	20	20
Influenza Unknown Or Untyped	0	0
Total	64	64

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 40 (September 30, 2018 - October 6, 2019)*‡

Age Group	Week 40 Cases	Week 40 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	11	2.94	11	2.94
05-24	27	1.68	27	1.68
25-49	18	0.94	18	0.94
50-64	3	0.24	3	0.24
65+	5	0.52	5	0.52
Total	64	1.05	64	1.05

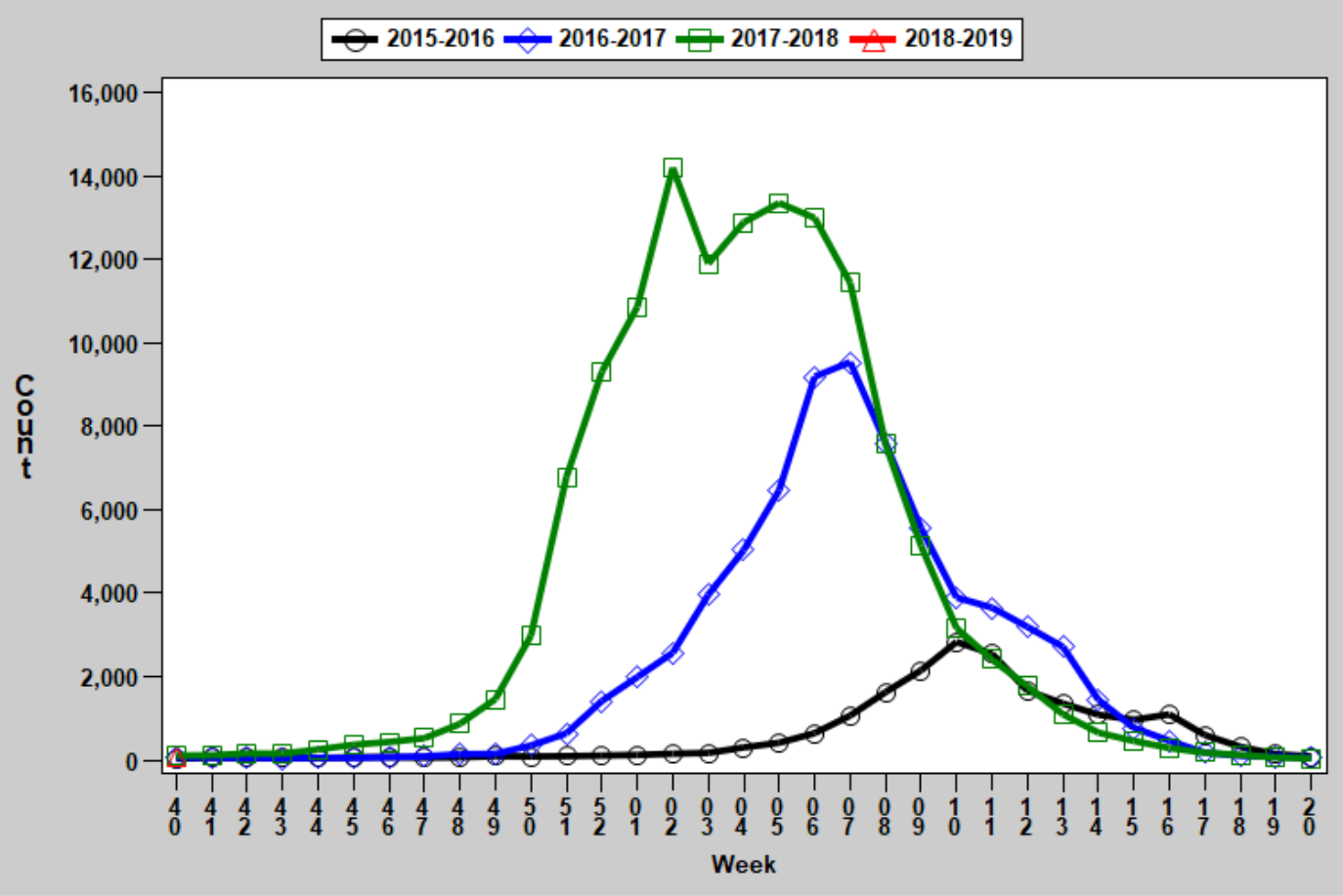
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 40 (September 30, 2018 - October 6, 2019)[*‡]

Region	Week 40 Cases	Week 40 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	20	2.95	20	2.95
Eastern	11	0.49	11	0.49
Northwest	2	0.13	2	0.13
Southeast	12	2.54	12	2.54
Southwest	19	1.77	19	1.77
Total	64	1.05	64	1.05

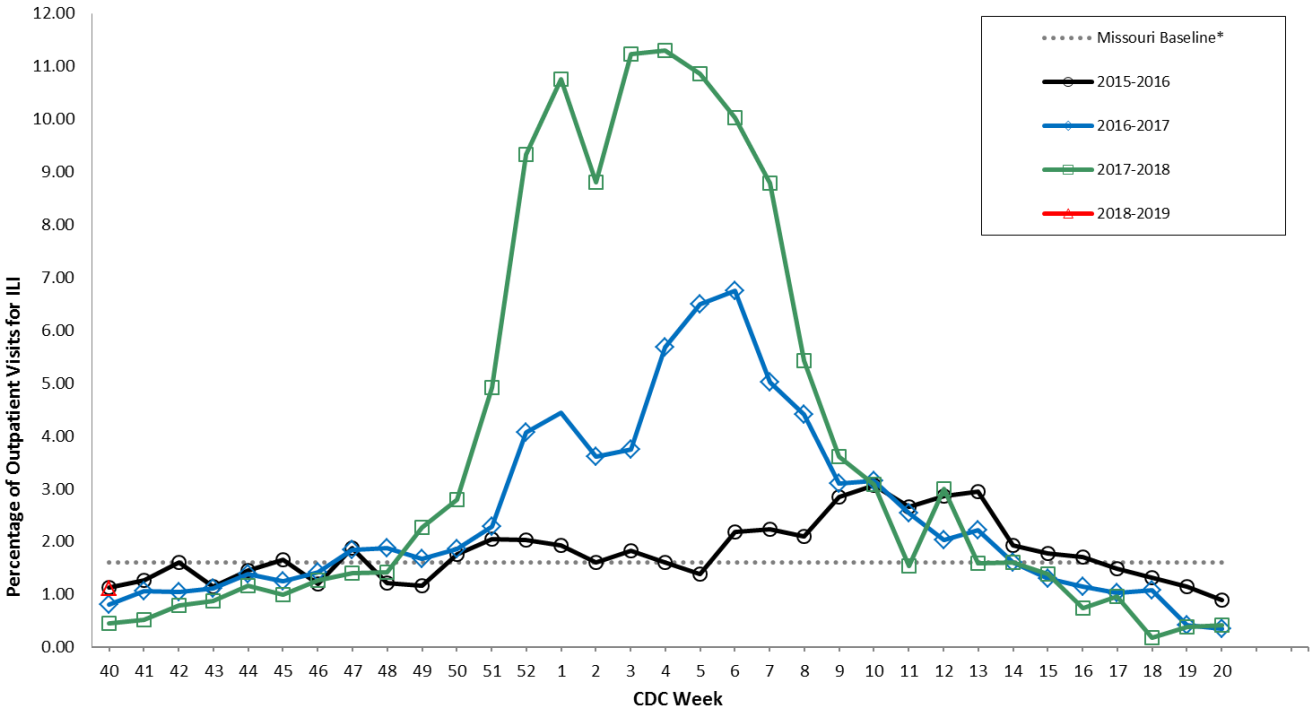
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

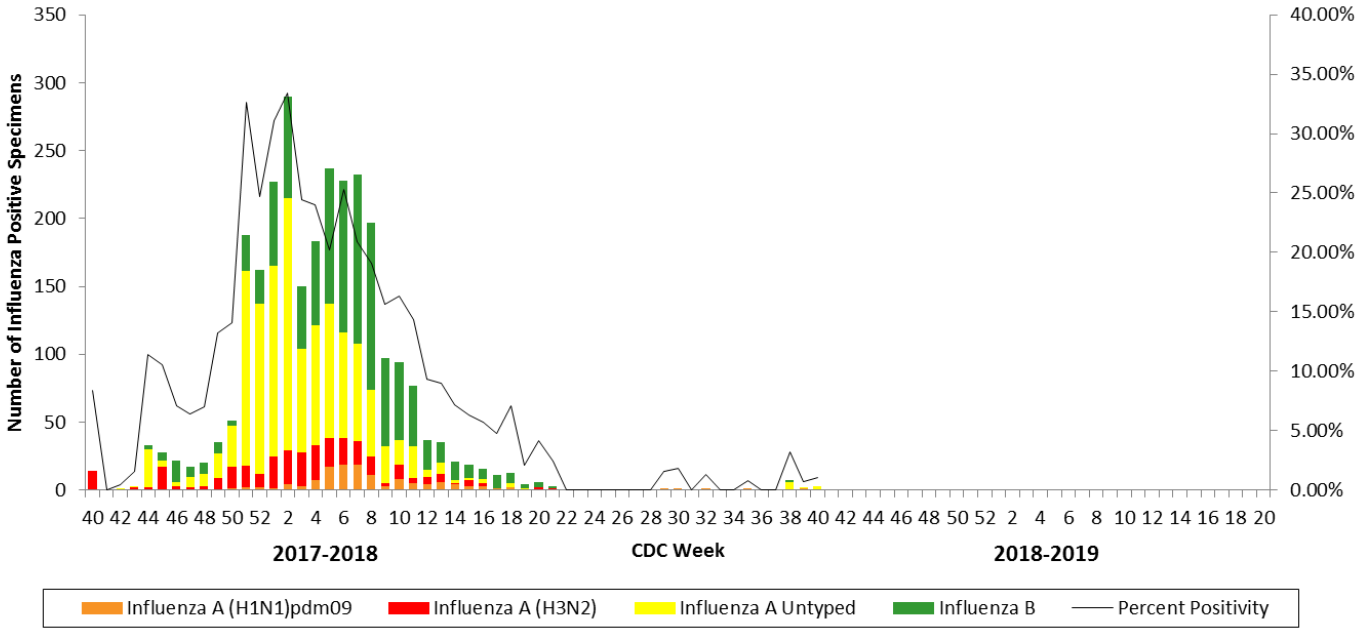
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019[*†]



[*]The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

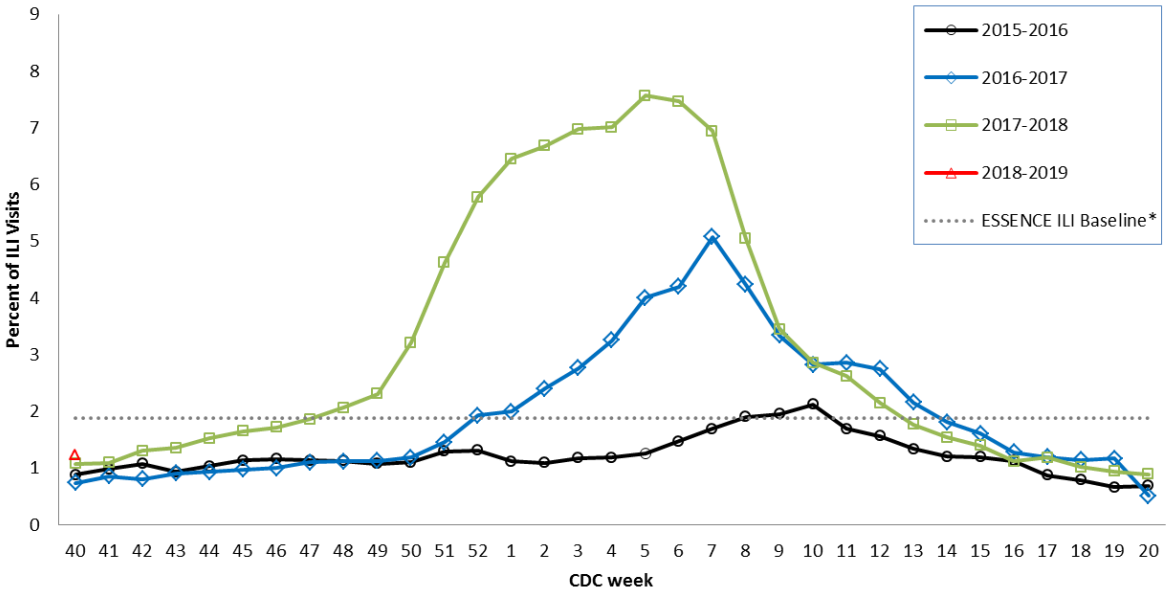
[†]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

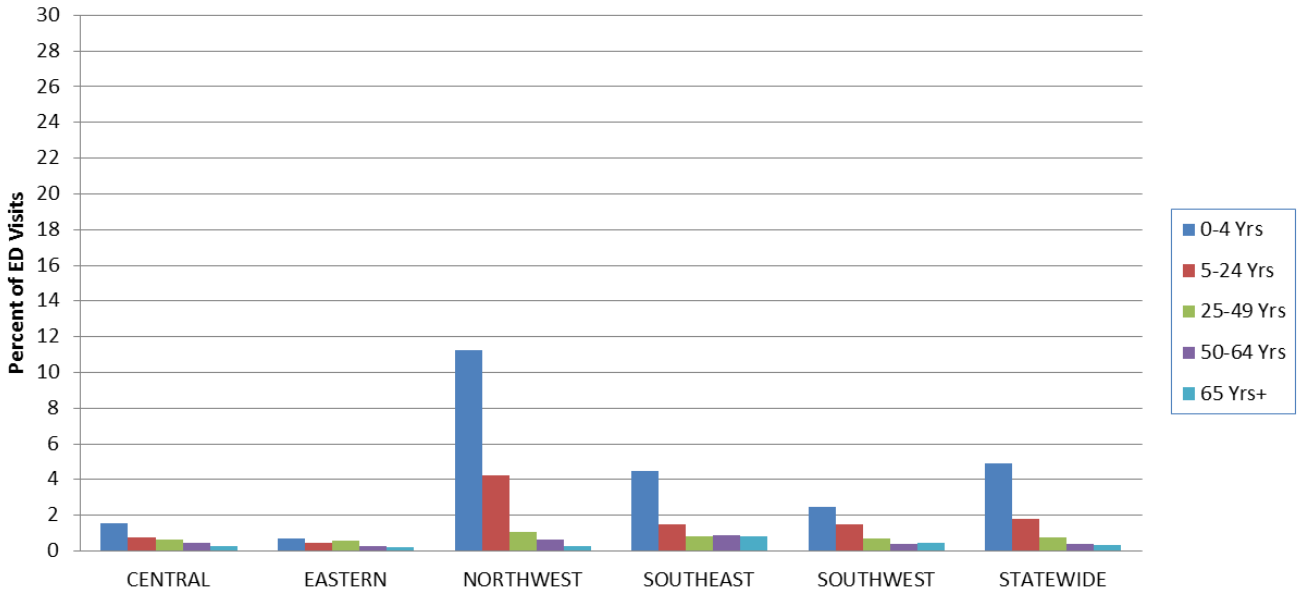
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

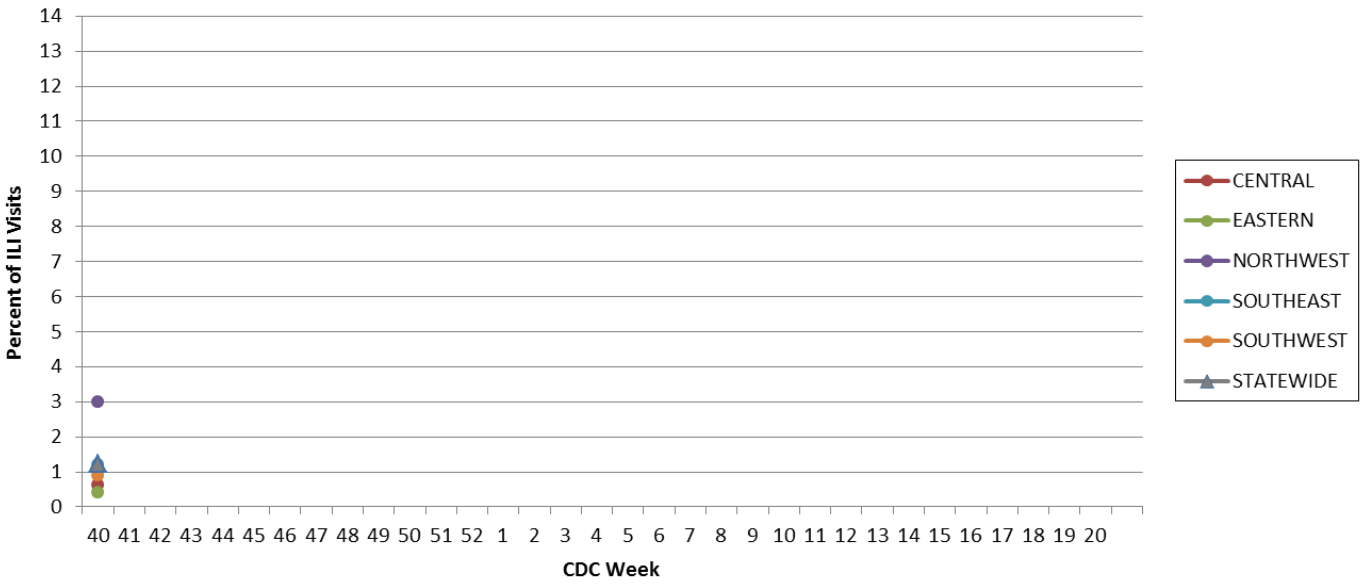
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 40, 2018*



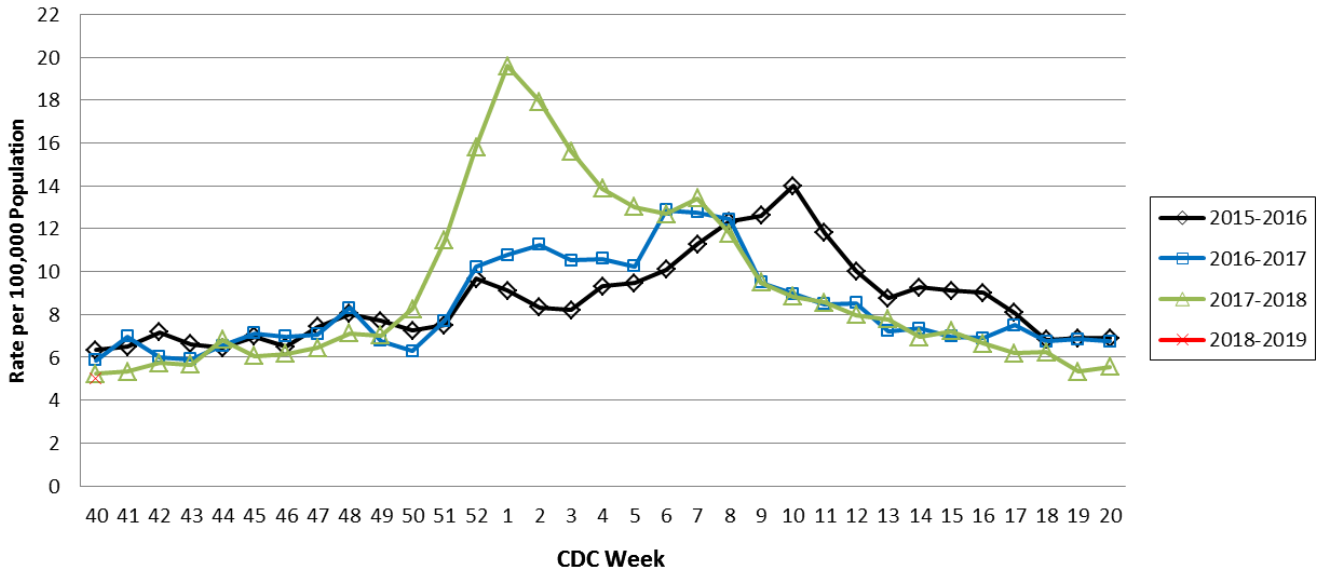
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



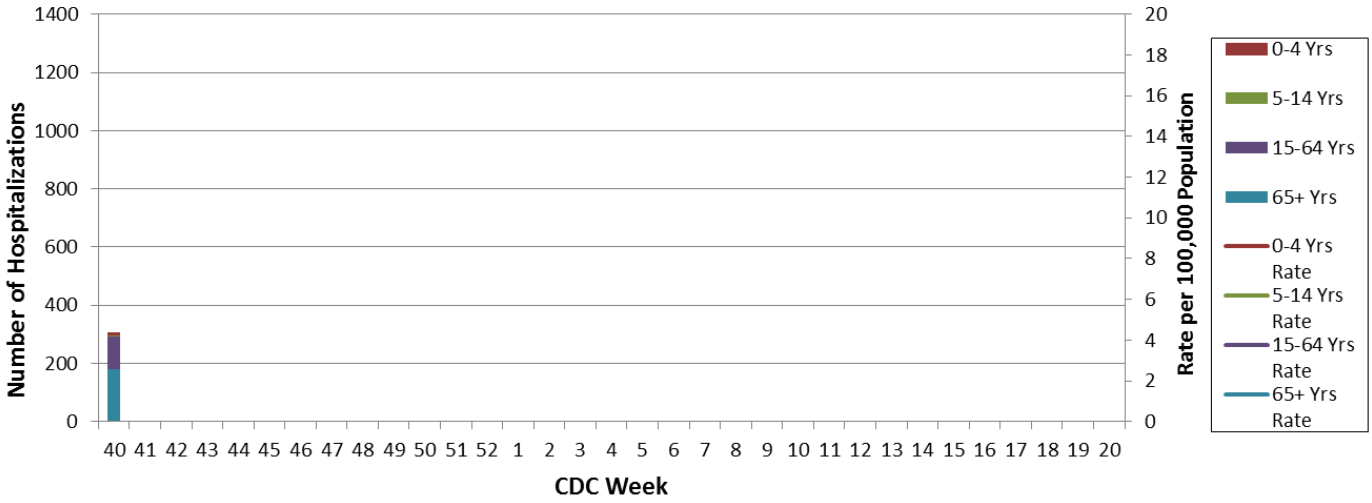
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 40, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2018-2019 Influenza Season[1]

Week 41: October 7 – October 13, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- During Week 41, a total of 147 laboratory-positive[3] influenza cases (87 influenza A and 60 influenza B) were reported. A season-to-date total of 288 laboratory-positive influenza cases (171 influenza A and 117 influenza B) have been reported in Missouri as of Week 41. The influenza type for reported season-to-date cases includes 59% influenza A and 41% influenza B. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 41. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 41 (Figure 6).
- Influenza-like illness (ILI) activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.34% (Figure 5) and 1.29% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- No influenza-associated deaths have been reported in Missouri as of Week 41.[5] During Week 40, 52 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 41.
- Seasonal influenza activity is low overall across the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 41**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 41**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 41 (October 7, 2018 - October 13, 2018)*

Influenza Type	Week 40	Week 41	2018-2019* Season-to-Date
Influenza A	84	87	171
Influenza B	57	60	117
Influenza Unknown Or Untyped	0	0	0
Total	141	147	288

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 41 (October 7, 2018 - October 13, 2018)*‡

Age Group	Week 41 Cases	Week 41 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	29	7.75	51	13.62
05-24	68	4.24	112	6.98
25-49	27	1.41	75	3.92
50-64	11	0.89	23	1.86
65+	12	1.26	27	2.83
Total	147	2.42	288	4.73

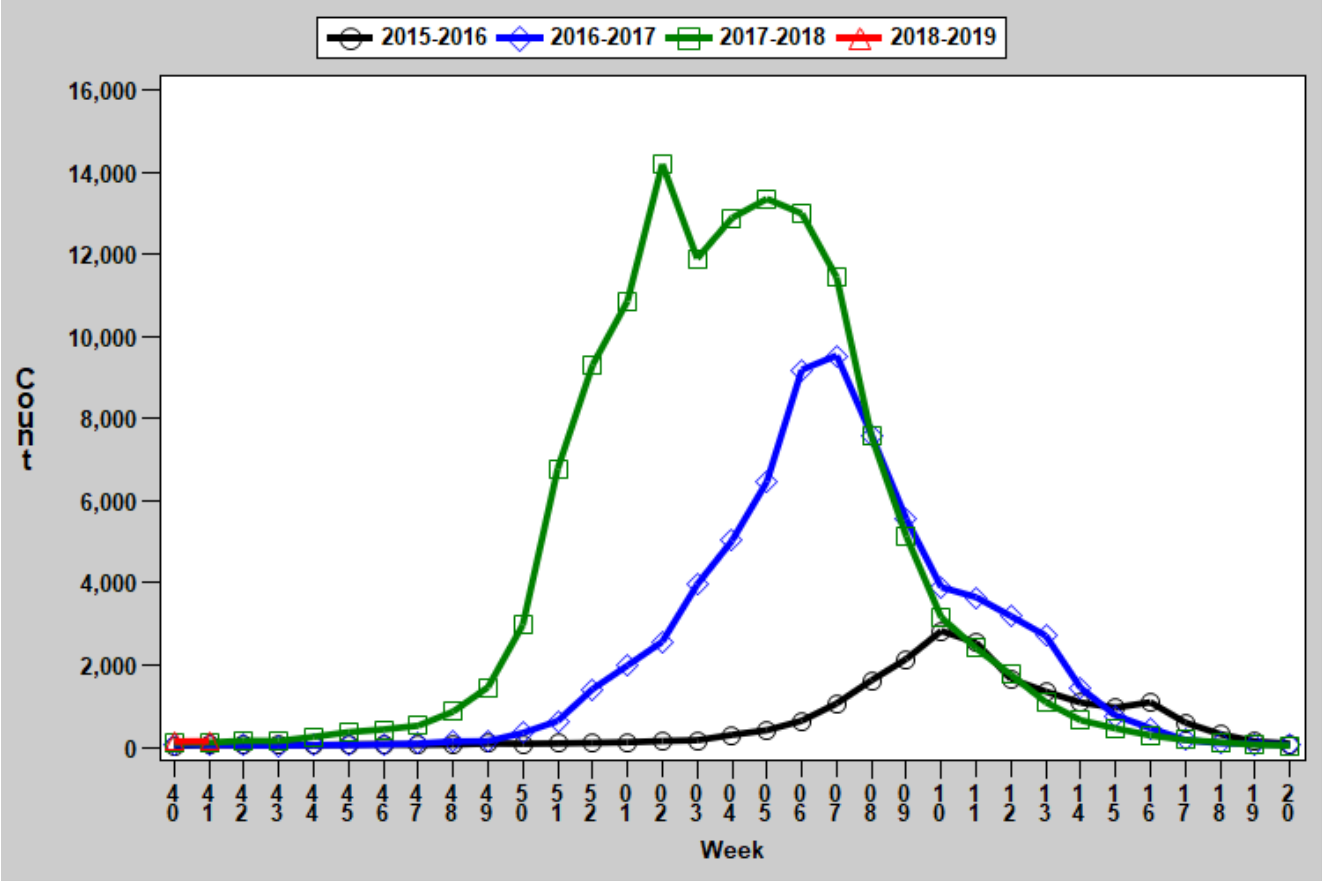
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 41 (October 7, 2018 - October 13, 2018)[*‡]

Region	Week 41 Cases	Week 41 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	24	3.55	64	9.45
Eastern	8	0.35	31	1.37
Northwest	21	1.31	37	3.32
Southeast	82	17.38	122	25.86
Southwest	12	1.12	34	3.17
Total	147	2.42	288	4.73

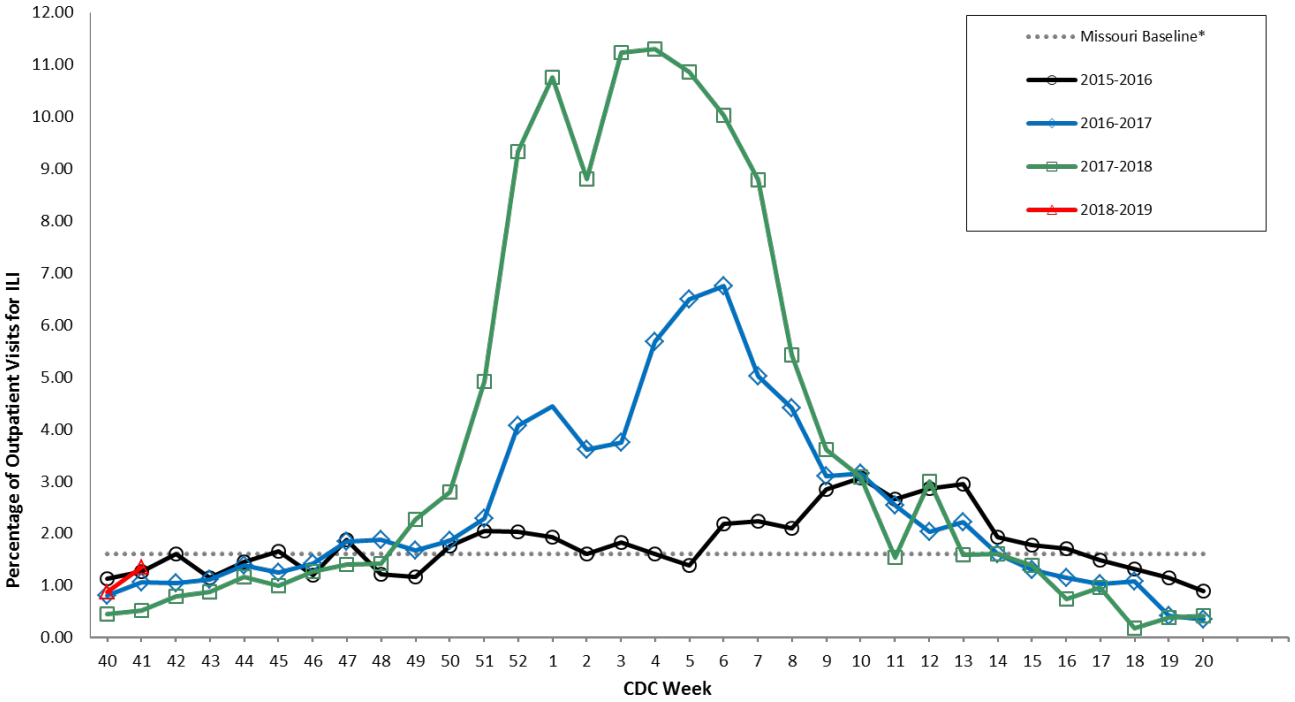
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

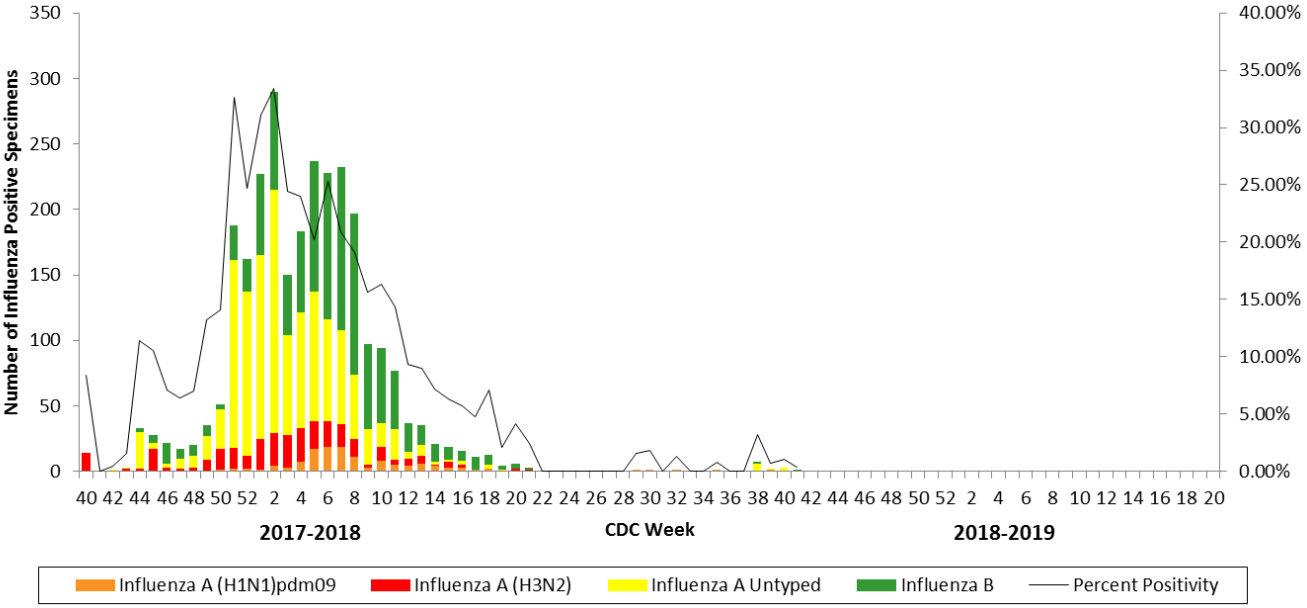
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

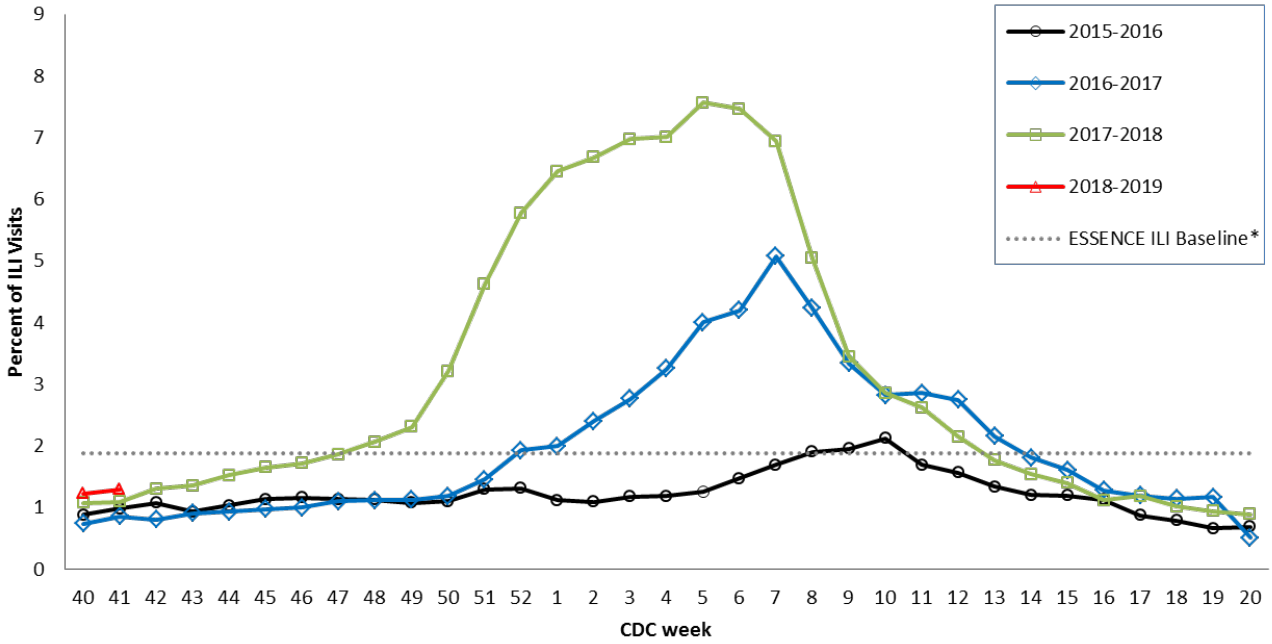
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

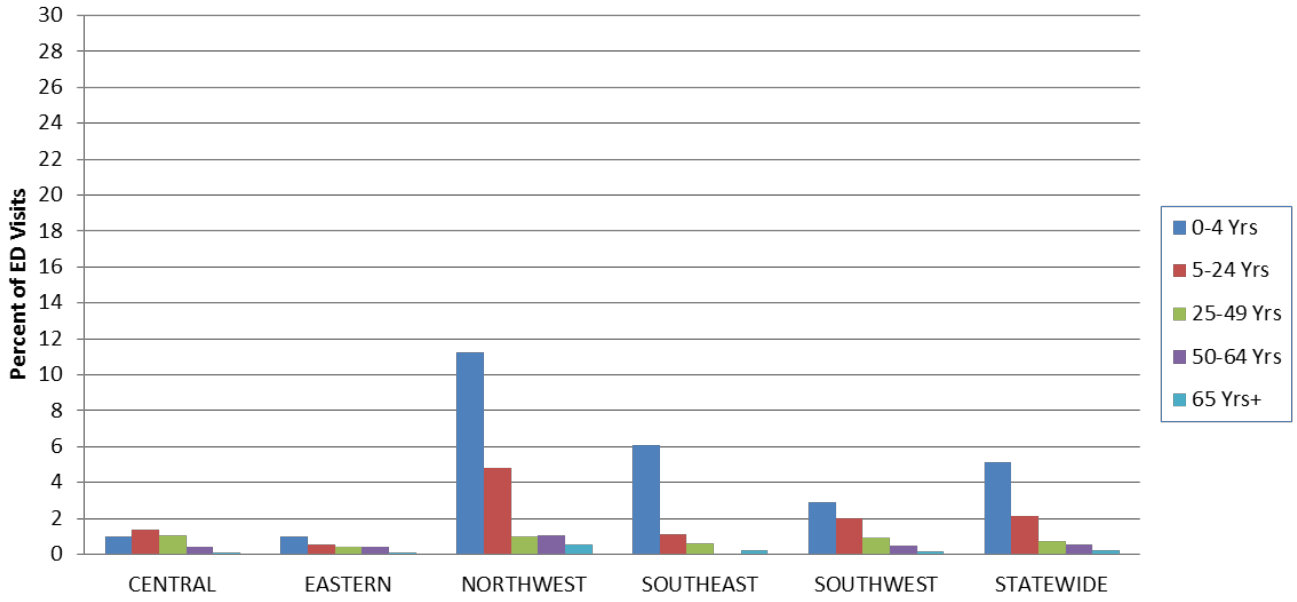
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

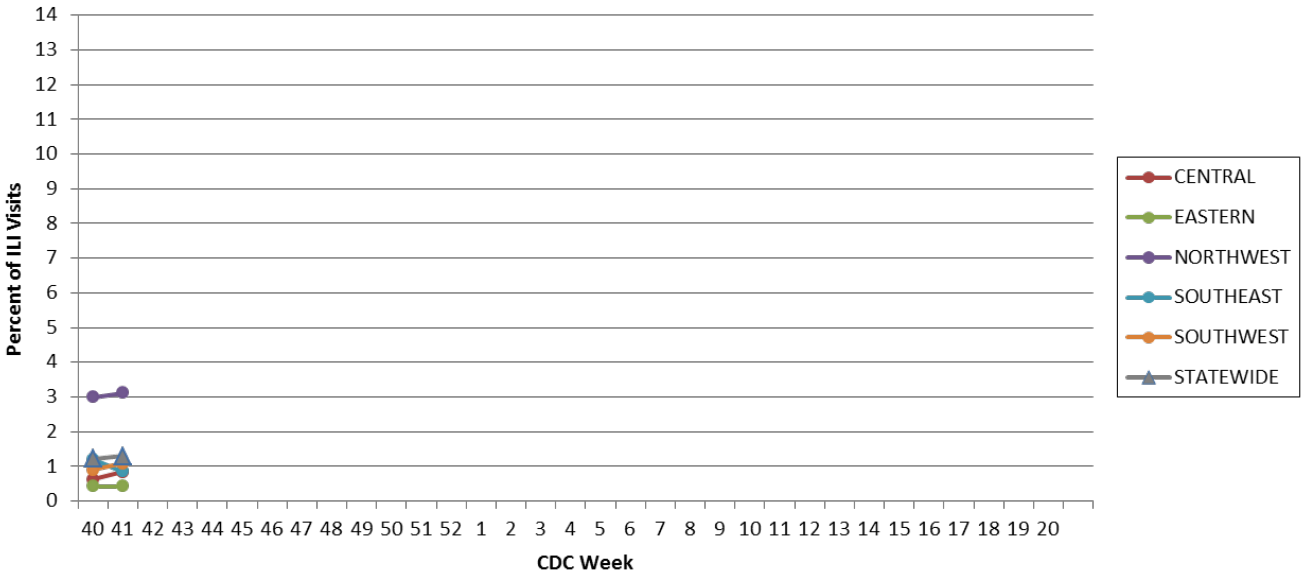
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 41, 2018*



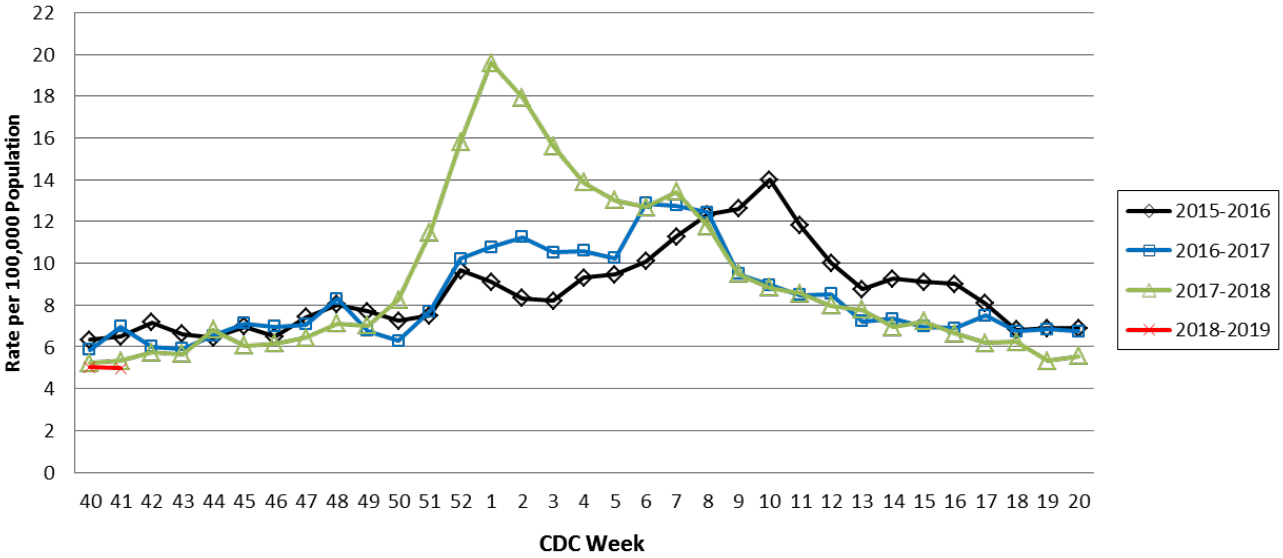
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



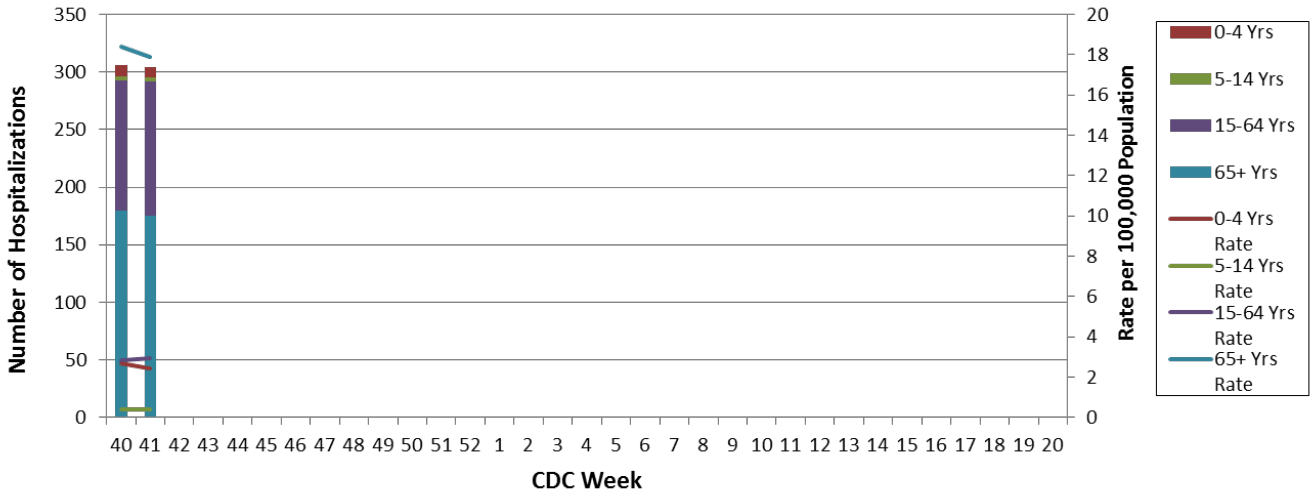
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 41, 2018-2019 Influenza Season



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Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 42: October 14 – October 20, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 42, a total of 119 laboratory-positive[3] influenza cases (75 influenza A and 44 influenza B) were reported. A season-to-date total of 427 laboratory-positive influenza cases (259 influenza A and 168 influenza B) have been reported in Missouri as of Week 42. The influenza type for reported season-to-date cases includes 61% influenza A and 39% influenza B. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 42. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 42 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.36% (Figure 5) and 1.57% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- No influenza-associated deaths have been reported in Missouri as of Week 42.[5] During Week 41, 39 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 42.

- Seasonal influenza activity is low overall across the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 42**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 42**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive[†] Influenza Cases by Influenza Type, Missouri, CDC Week 42 (October 14, 2018 - October 20, 2018)[*]

Influenza Type	Week 40	Week 41	Week 42	2018-2019* Season-to-Date
Influenza A	84	100	75	259
Influenza B	59	65	44	168
Influenza Unknown Or Untyped	0	0	0	0
Total	143	165	119	427

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 42 (October 14, 2018 - October 20, 2018)[*‡]

Age Group	Week 42 Cases	Week 42 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
00-04	22	5.88	73	19.50
05-24	49	3.05	172	10.72
25-49	27	1.41	106	5.54
50-64	11	0.89	38	3.07
65+	10	1.05	38	3.98
Total	119	1.96	427	7.02

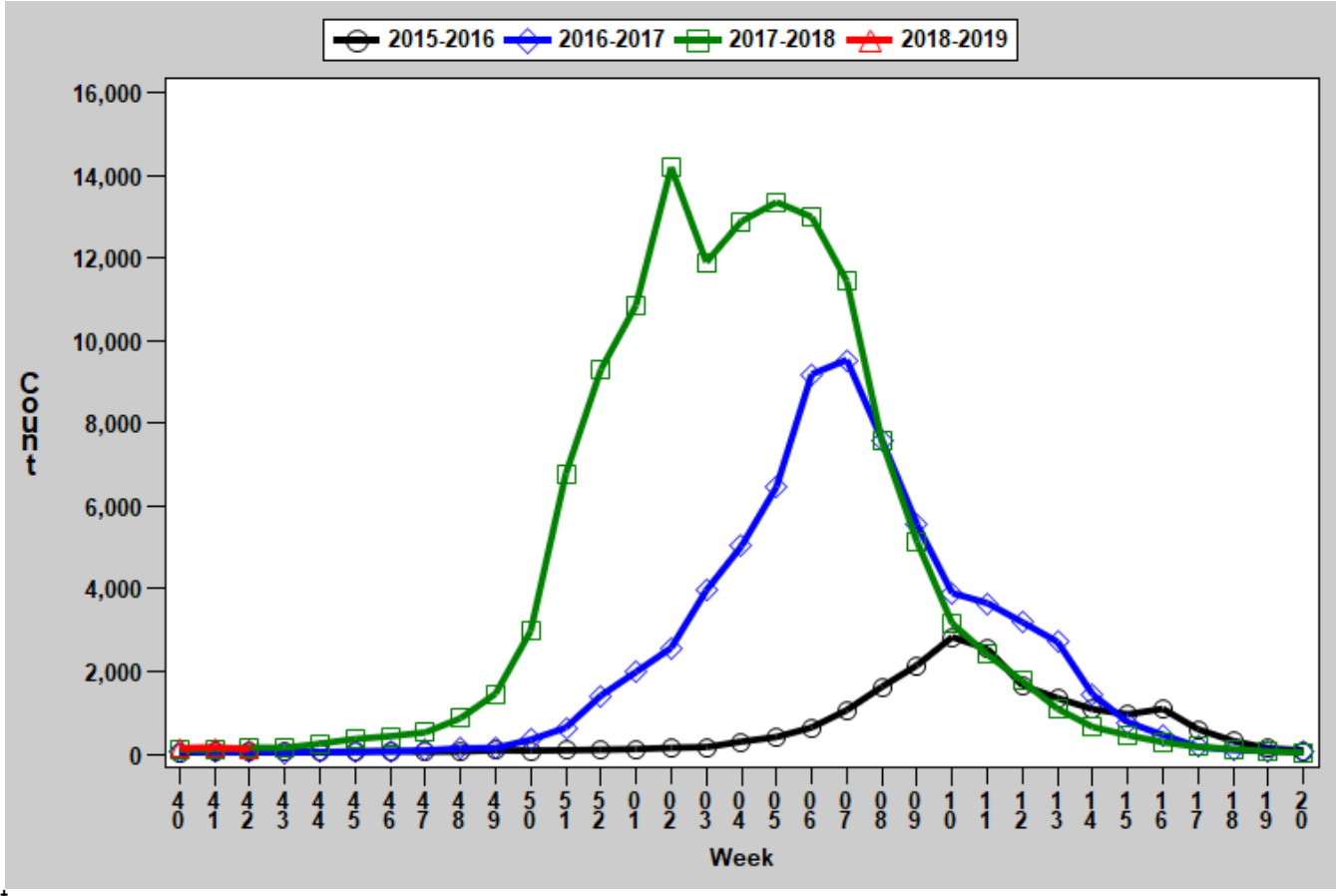
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 42 (October 14, 2018 - October 20, 2018)[*‡]

Region	Week 42 Cases	Week 42 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	6	0.89	70	10.34
Eastern	28	1.24	63	2.78
Northwest	10	0.63	49	3.07
Southeast	68	14.42	197	41.76
Southwest	7	0.65	48	4.48
Total	119	1.96	427	7.02

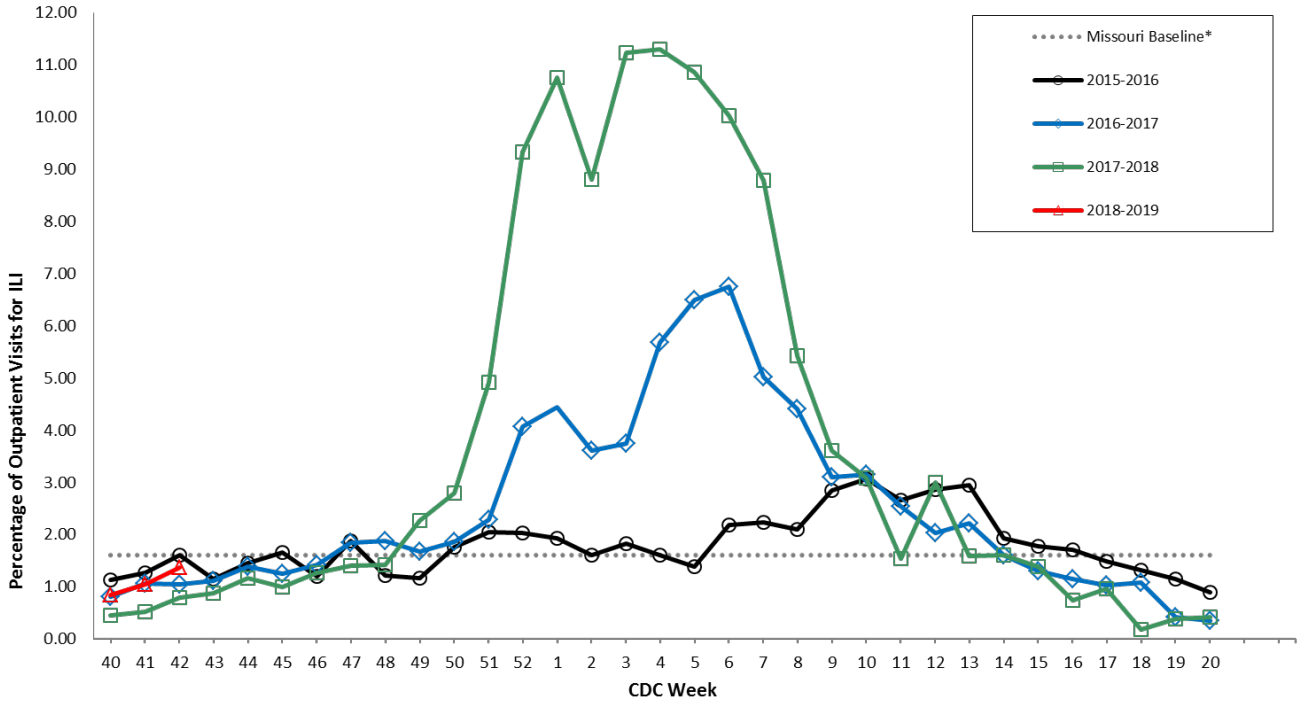
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

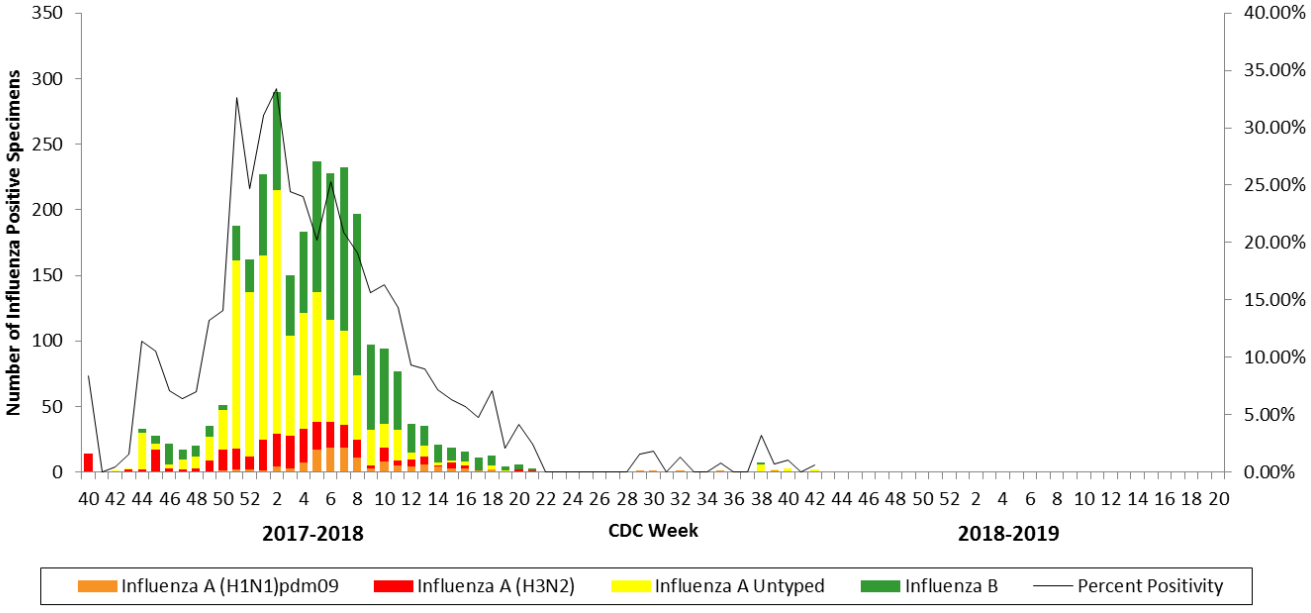
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

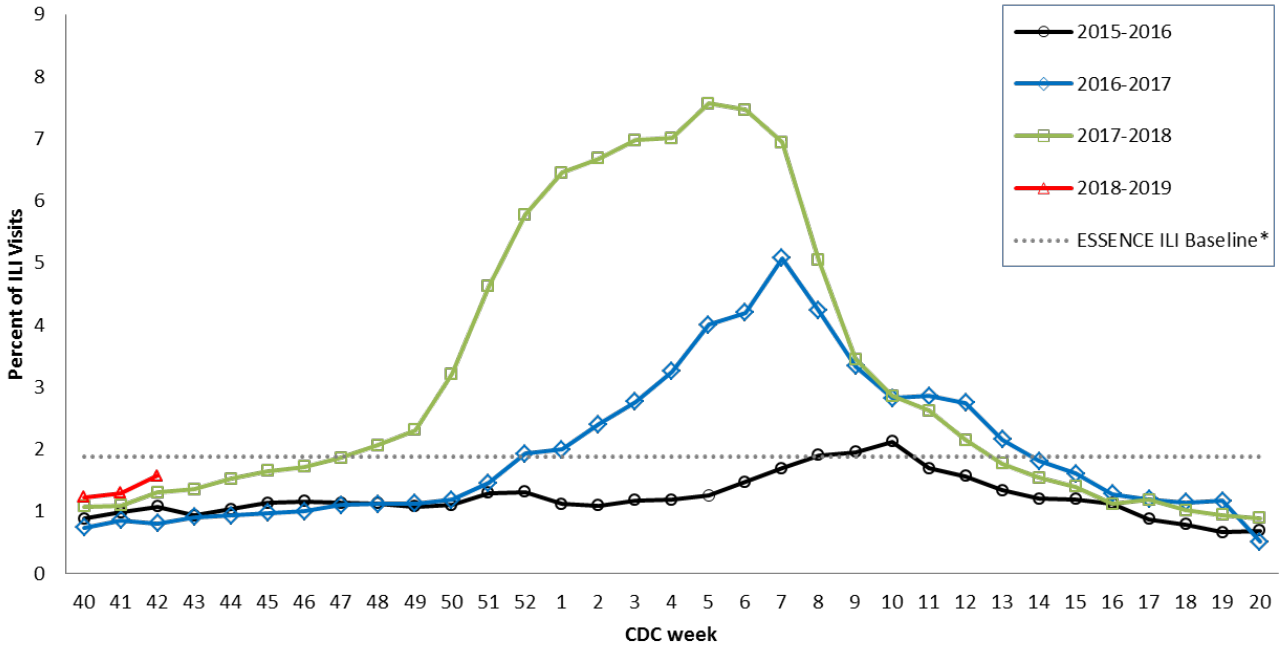
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

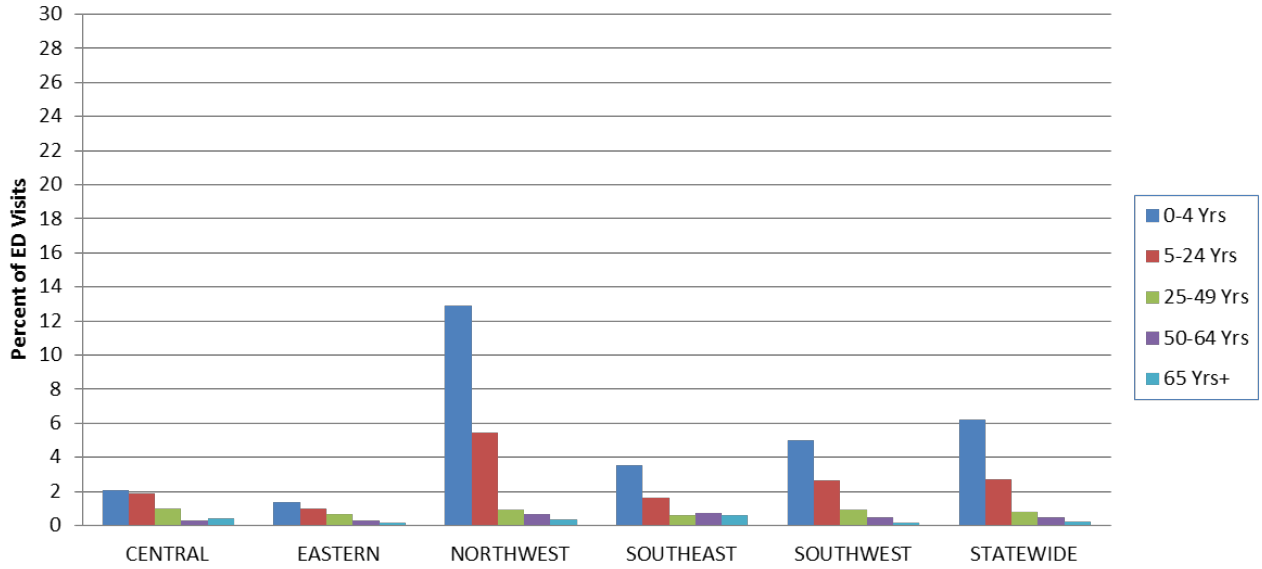
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

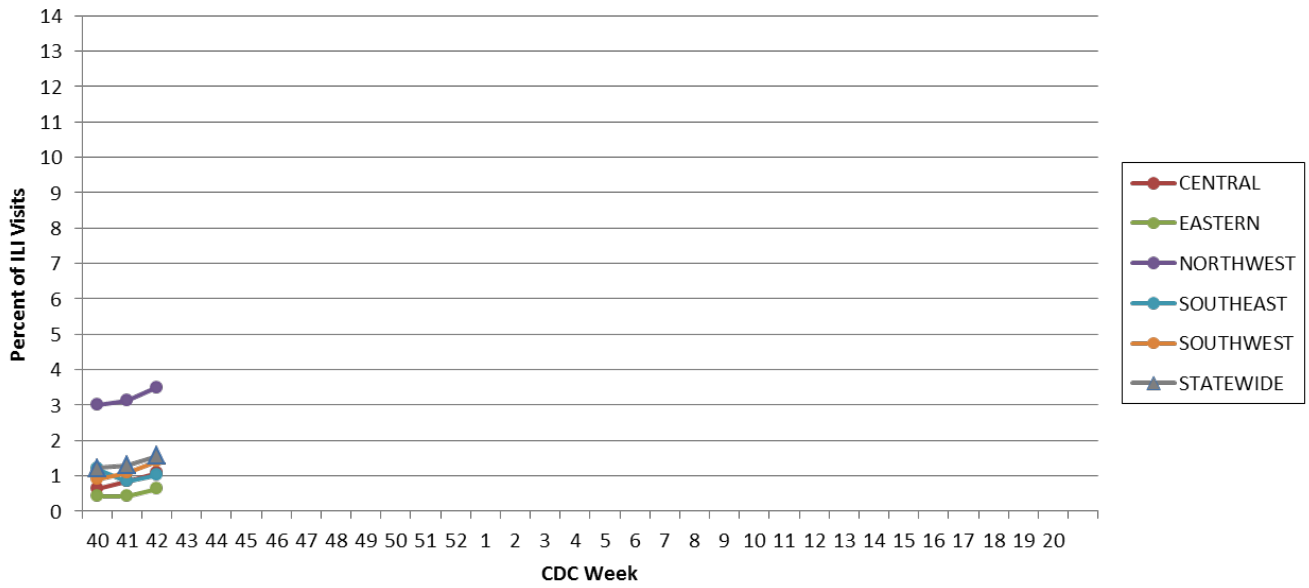
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 42, 2018*



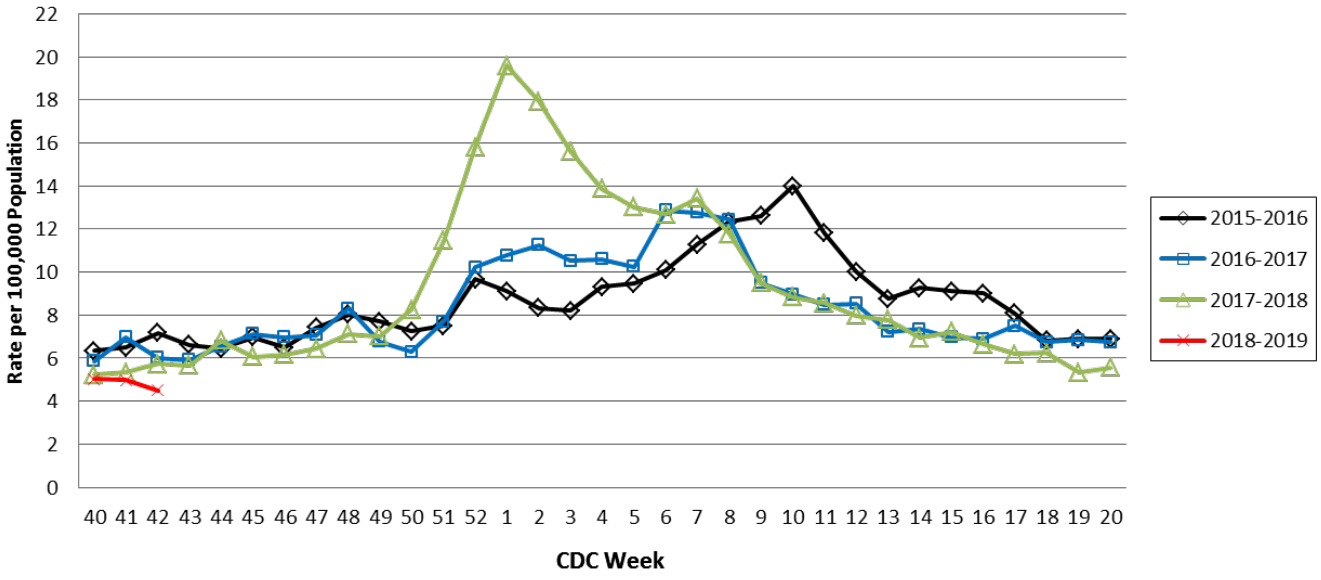
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



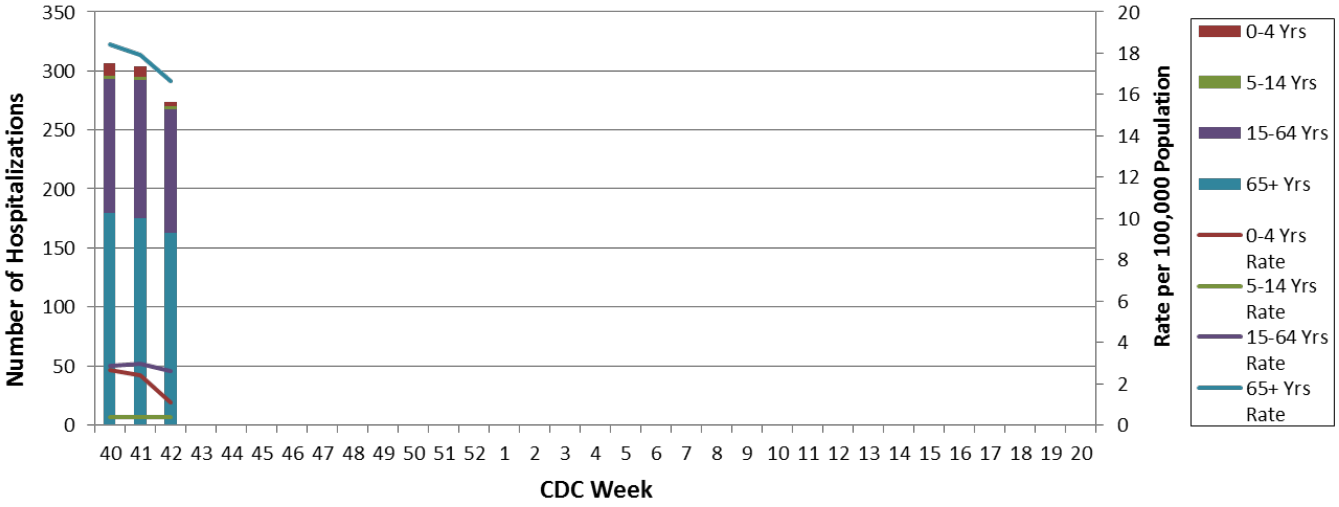
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 42, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 43: October 21 – October 27, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 43, a total of 123 laboratory-positive[3] influenza cases (72 influenza A and 51 influenza B) were reported. A season-to-date total of 642 laboratory-positive influenza cases have been reported in Missouri as of Week 43. The influenza type for reported season-to-date cases includes 60% influenza A and 40% influenza B. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 43. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) remained low during Week 43 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.58% (Figure 5) and 1.66% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- No influenza-associated deaths have been reported in Missouri as of Week 43.[5] During Week 42, 48 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records.

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 43.

- Seasonal influenza activity remains low overall across the United States. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 43**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 43**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 43 (October 21, 2018 - October 27, 2018)*

Influenza Type	Week 41	Week 42	Week 43	2018-2019* Season-to-Date
Influenza A	120	108	72	385
Influenza B	77	67	51	256
Influenza Unknown Or Untyped	1	0	0	1
Total	198	175	123	642

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 43 (October 21, 2018 - October 27, 2018)*‡

Age Group	Week 43 Cases	Week 43 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	18	4.81	104	27.78
05-24	45	2.80	243	15.14
25-49	29	1.52	159	8.31
50-64	18	1.46	71	5.74
65+	13	1.36	65	6.81
Total	123	2.02	642	10.55

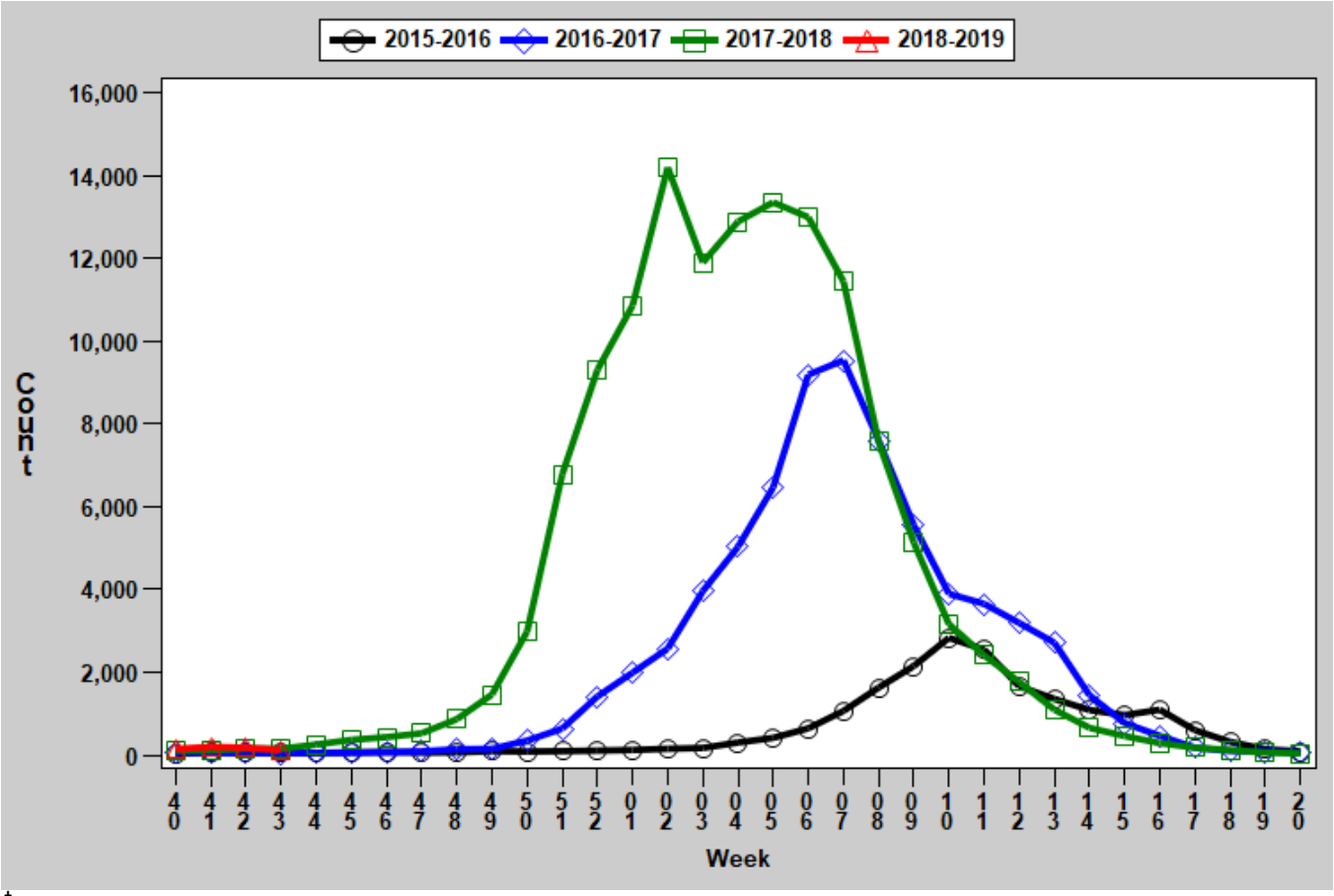
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 43 (October 21, 2018 - October 27, 2018)[*‡]

Region	Week 43 Cases	Week 43 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	4	0.59	82	12.11
Eastern	35	1.54	127	5.60
Northwest	20	1.25	82	5.13
Southeast	48	10.18	266	56.39
Southwest	16	1.49	85	7.93
Total	123	2.02	642	10.55

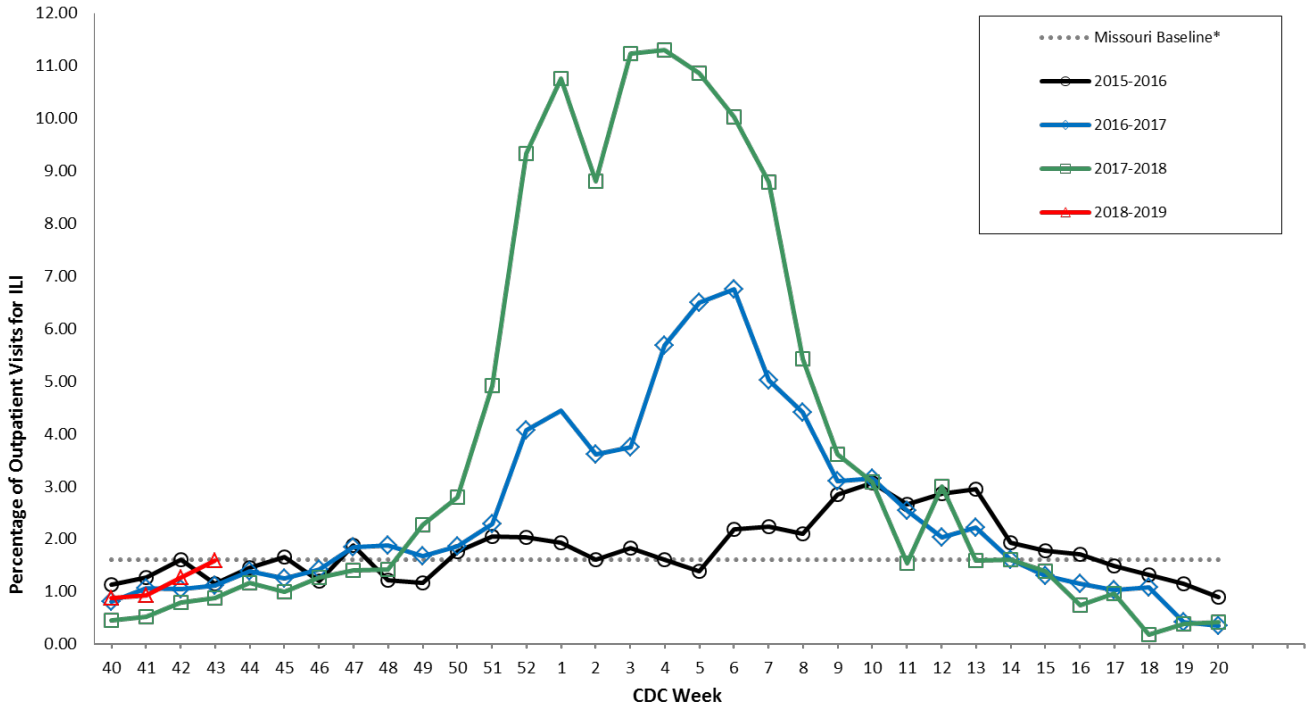
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

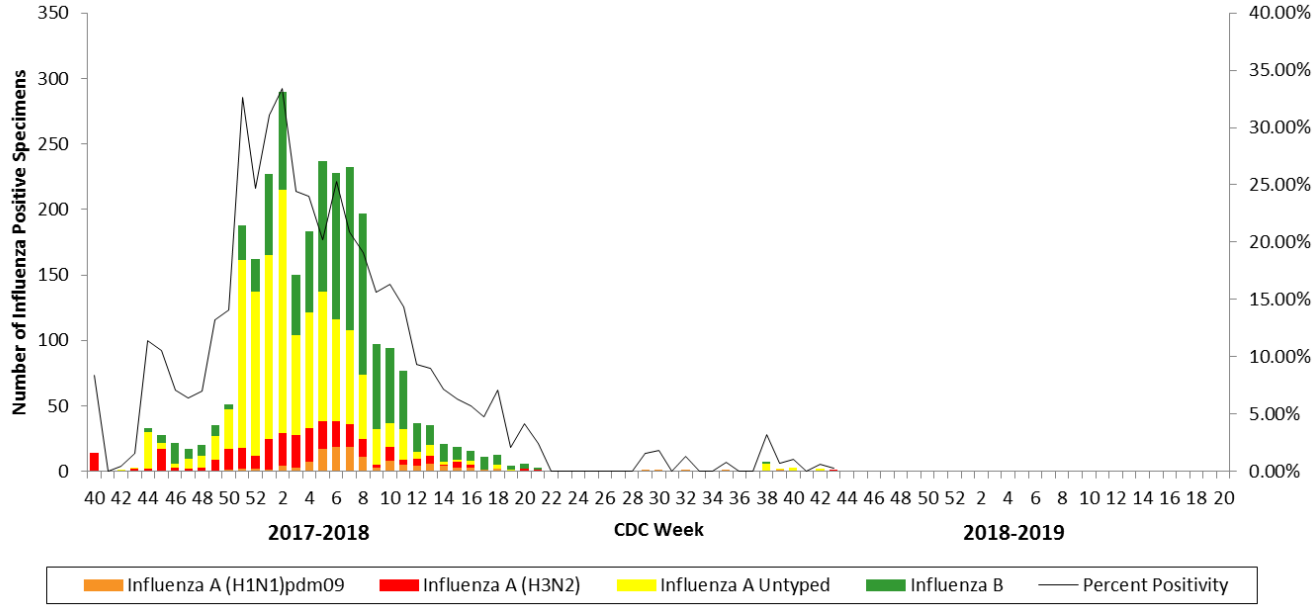
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019[*†]



[*]The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

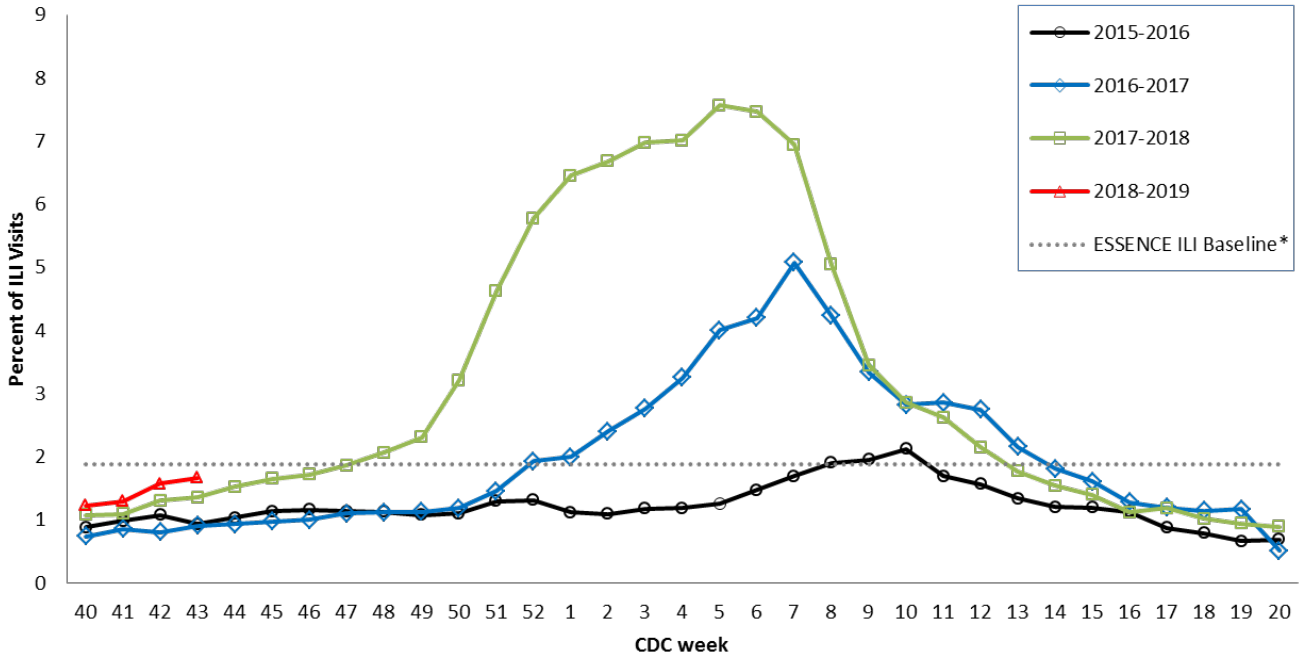
[†]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

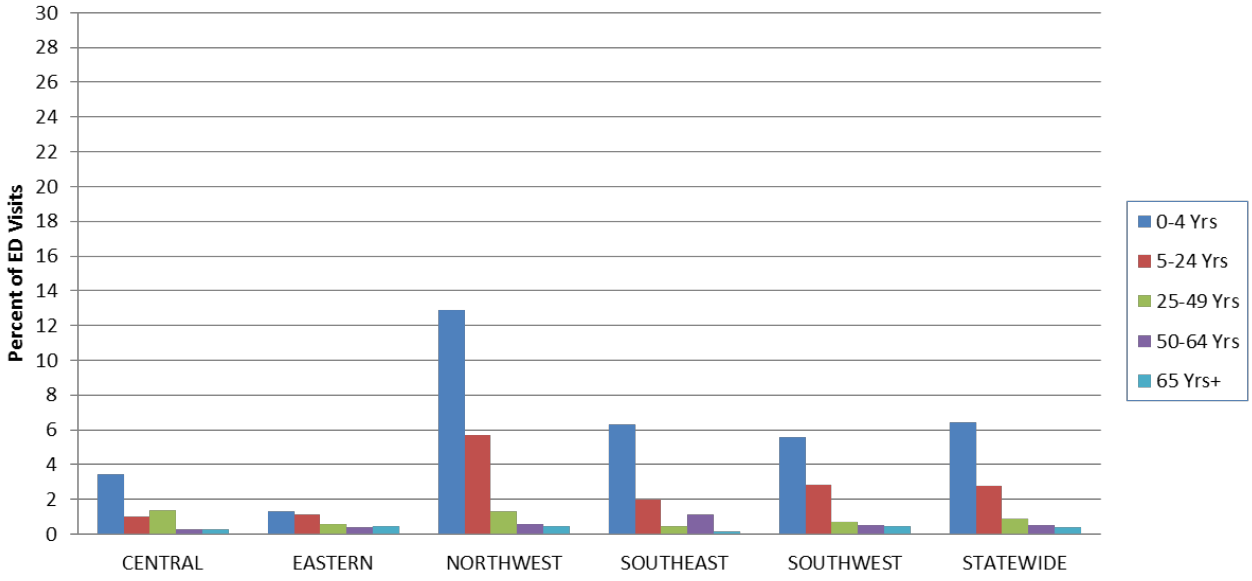
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

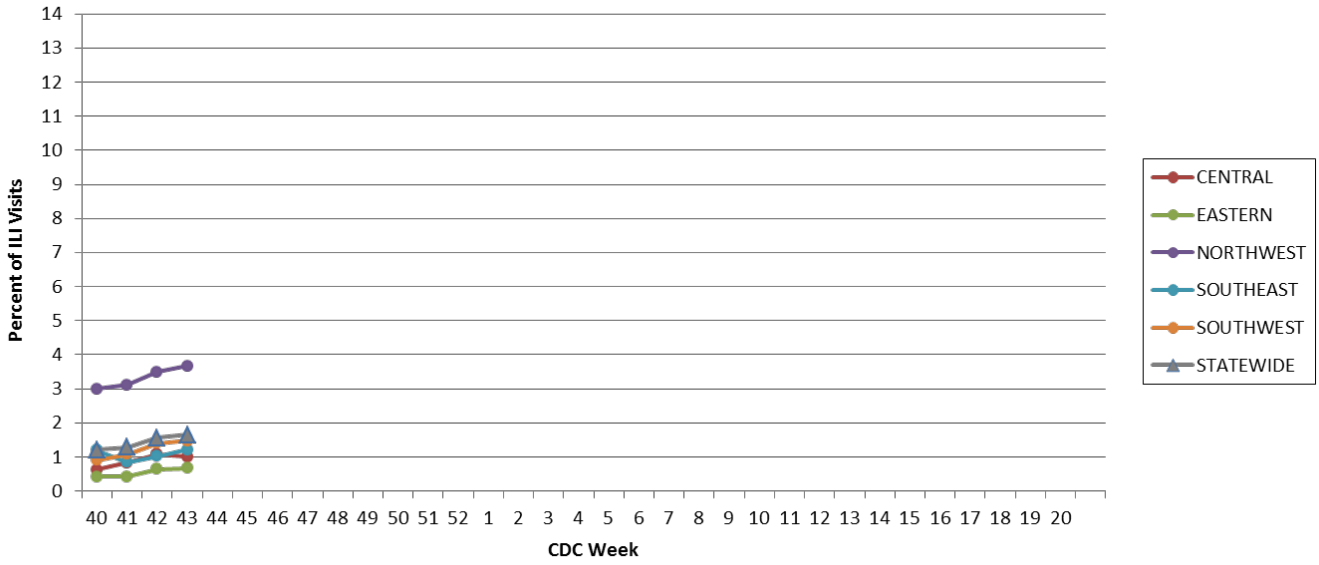
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 43, 2018*



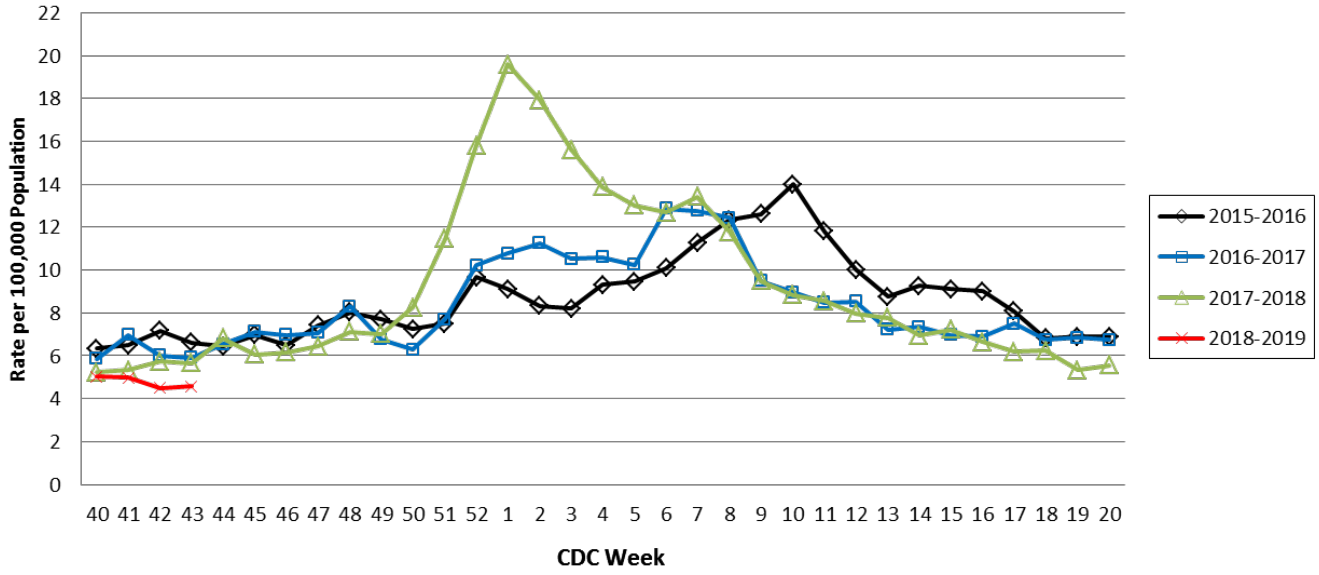
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



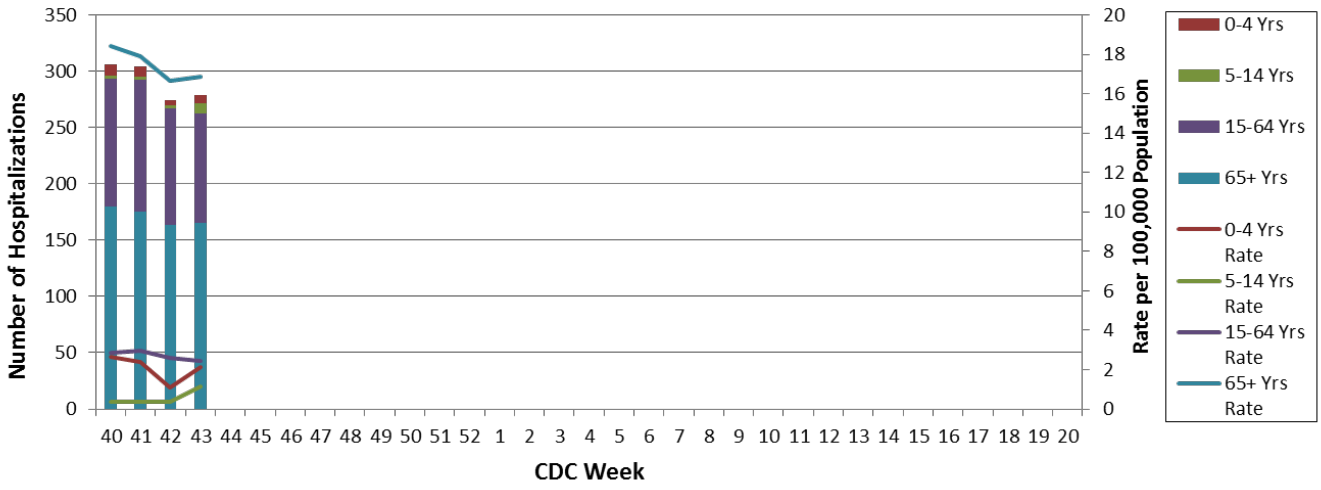
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 43, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report 2018-2019 Influenza Season[1]

Week 44: October 28 – November 3, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].
- During Week 44, a total of 115 laboratory-positive[3] influenza cases (73 influenza A, 39 influenza B, and three untyped) were reported. A season-to-date total of 809 laboratory-positive influenza cases have been reported in Missouri as of Week 44. The influenza type for reported season-to-date cases includes 59.8% influenza A, 39.7% influenza B and 0.5% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 44. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) also remained low during Week 44 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.89% (Figure 5) and 1.88% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- One influenza-associated death has been reported in Missouri as of Week 44.[5] During Week 43, 55 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 194 P&I associated deaths in Missouri.[6]
- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 44.
- Influenza activity remained low in the United States during Week 43. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 44**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 44**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 44 (October 28, 2018 – November 3, 2018)*

Influenza Type	Week 42	Week 43	Week 44	2018-2019* Season-to-Date
Influenza A	112	93	73	484
Influenza B	72	66	39	321
Influenza Unknown Or Untyped	0	0	3	4
Total	184	159	115	809

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 44 (October 28, 2018 – November 3, 2018)*‡

Age Group	Week 44 Cases	Week 44 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	16	4.27	129	34.46
05-24	43	2.68	297	18.51
25-49	28	1.46	207	10.82
50-64	11	0.89	91	7.36
65+	17	1.78	85	8.90
Total	115	1.89	809	13.30

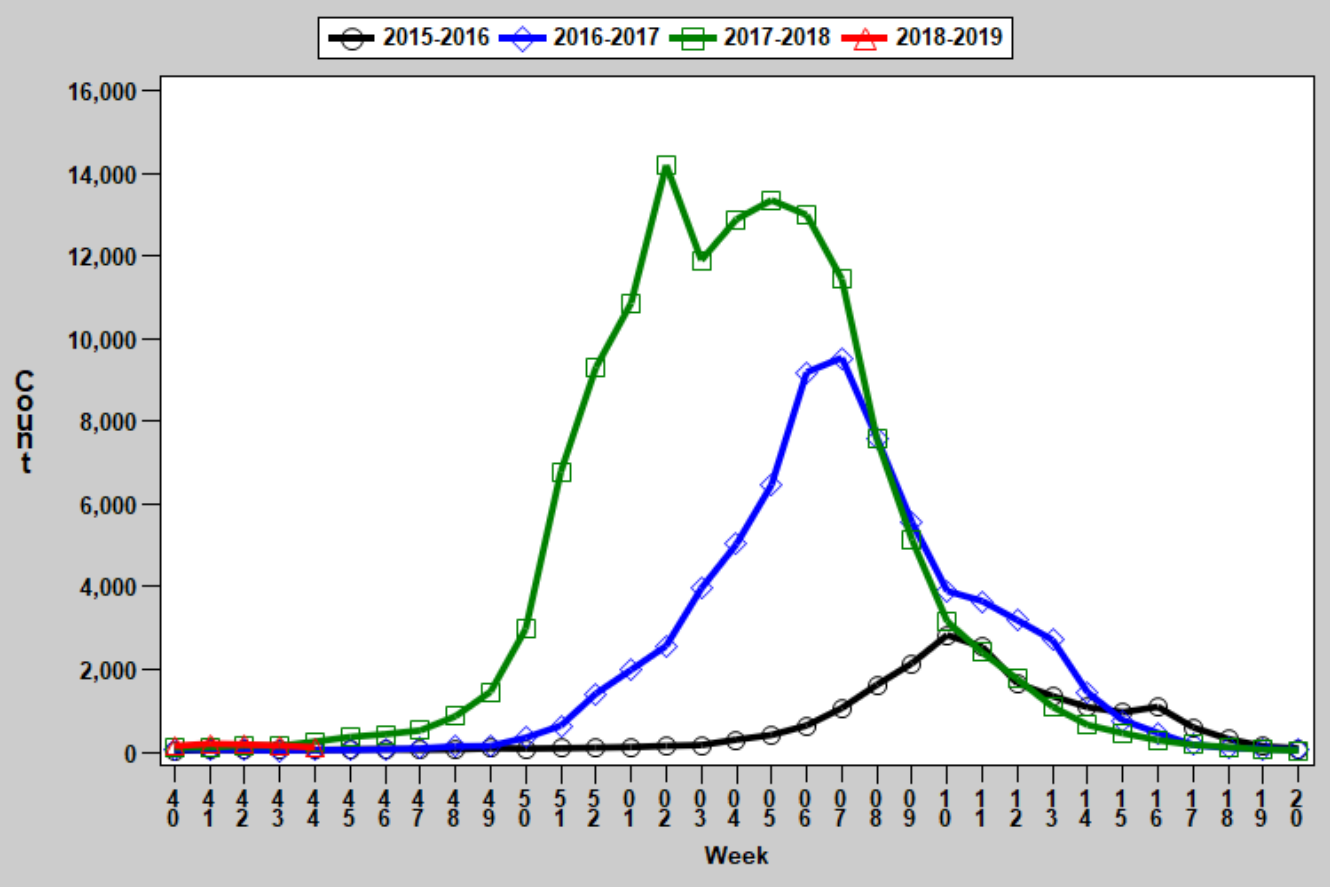
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 44 (October 28, 2018 – November 3, 2018)[*‡]

Region	Week 44 Cases	Week 44 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	7	1.03	105	15.51
Eastern	22	0.97	151	6.66
Northwest	20	1.25	110	6.89
Southeast	43	9.12	330	69.96
Southwest	23	2.15	113	10.55
Total	115	1.89	809	13.30

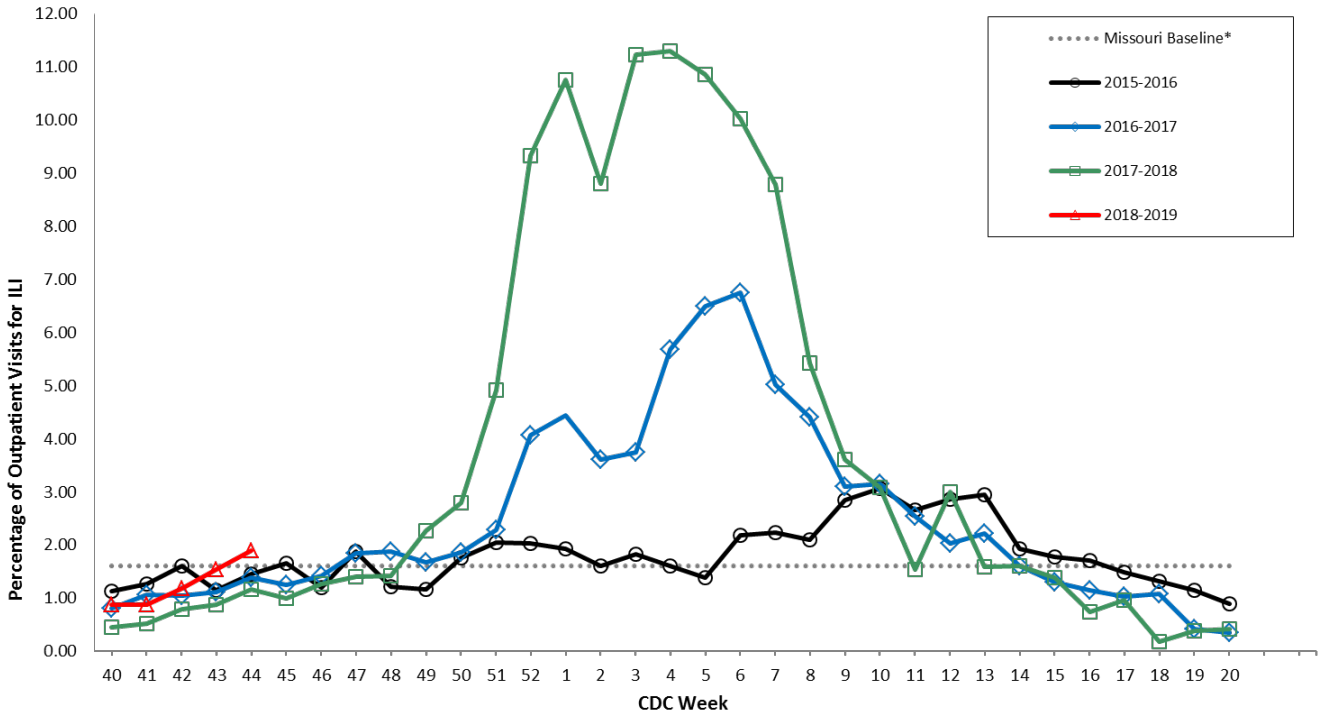
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

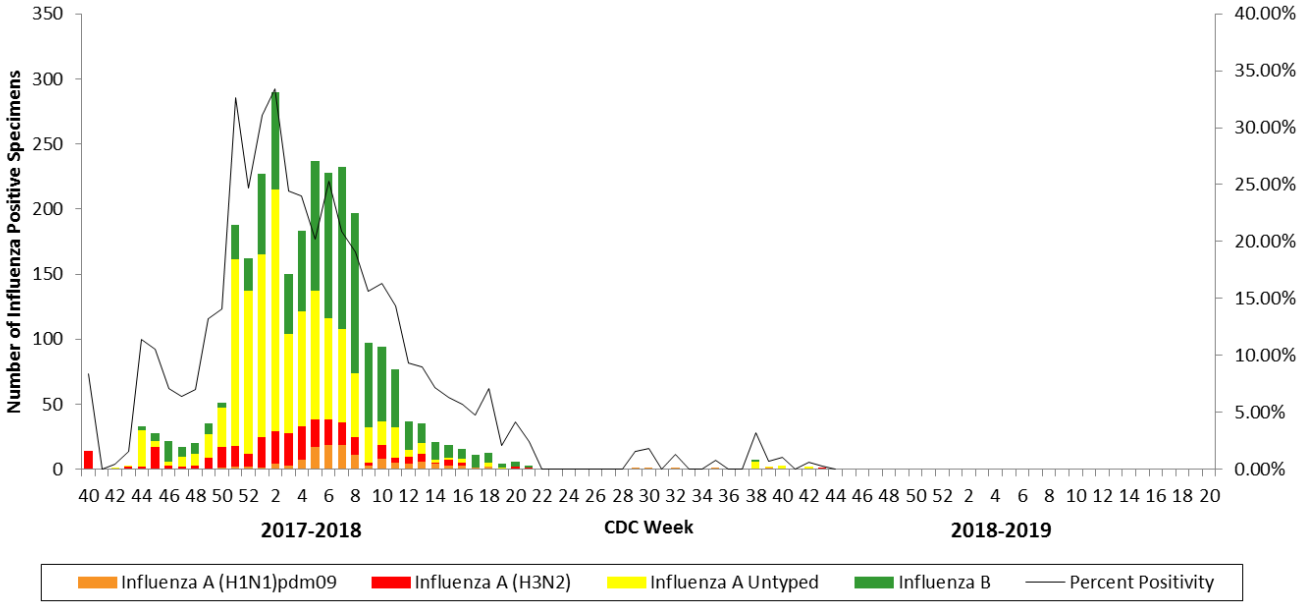
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

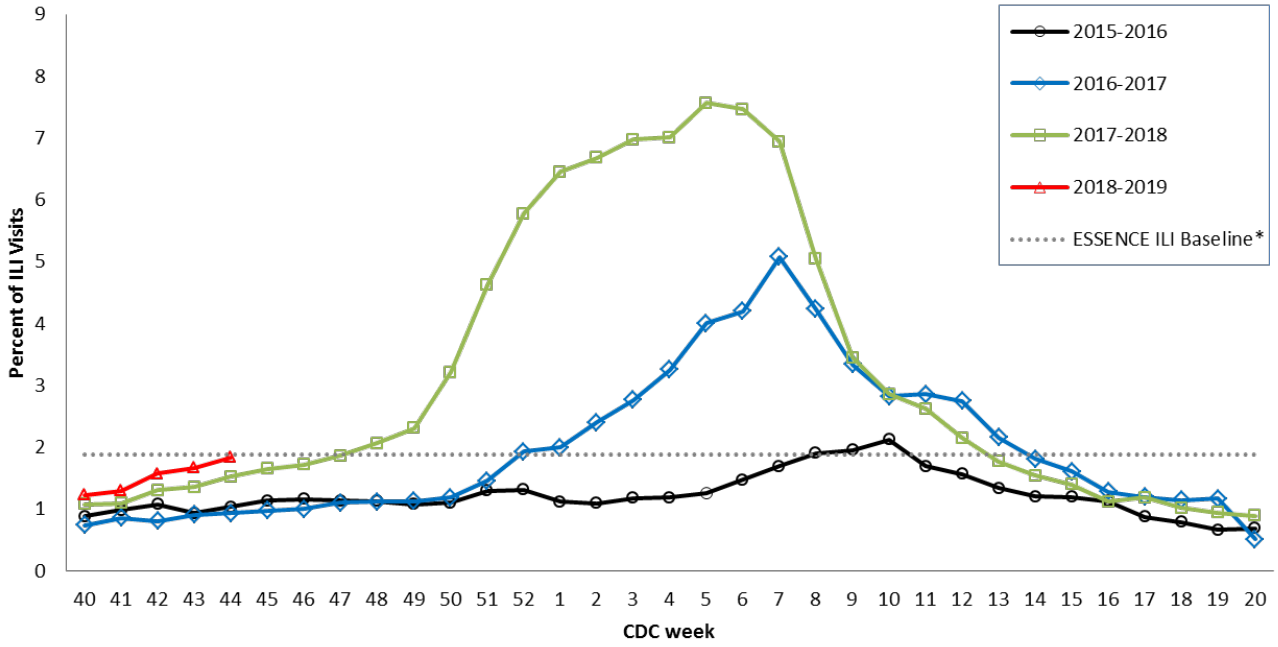
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

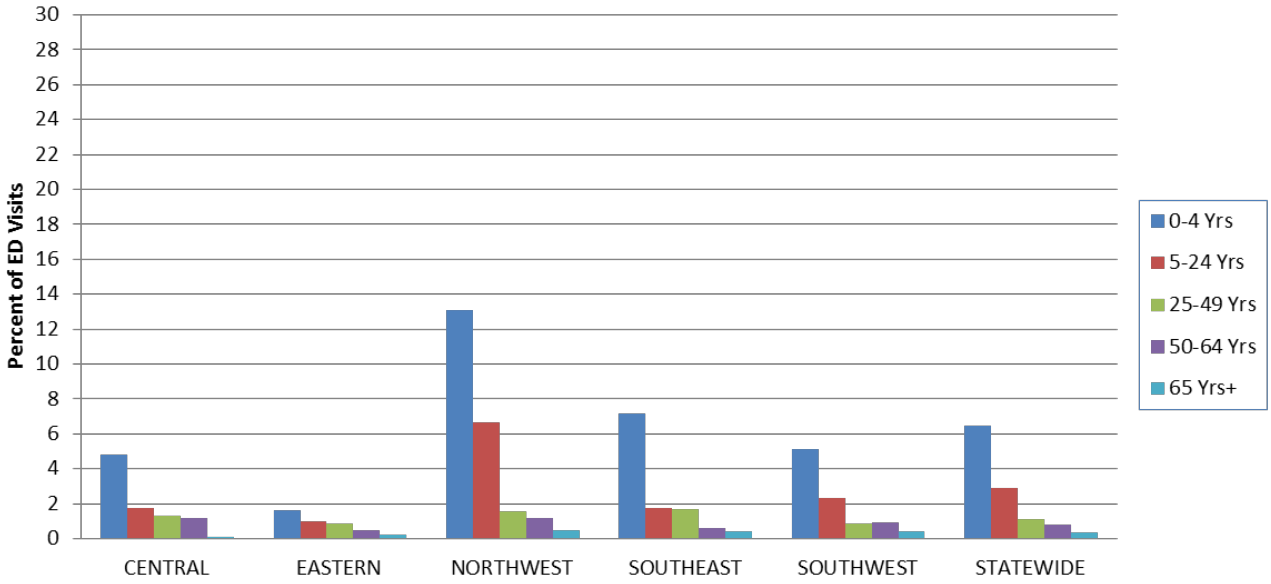
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

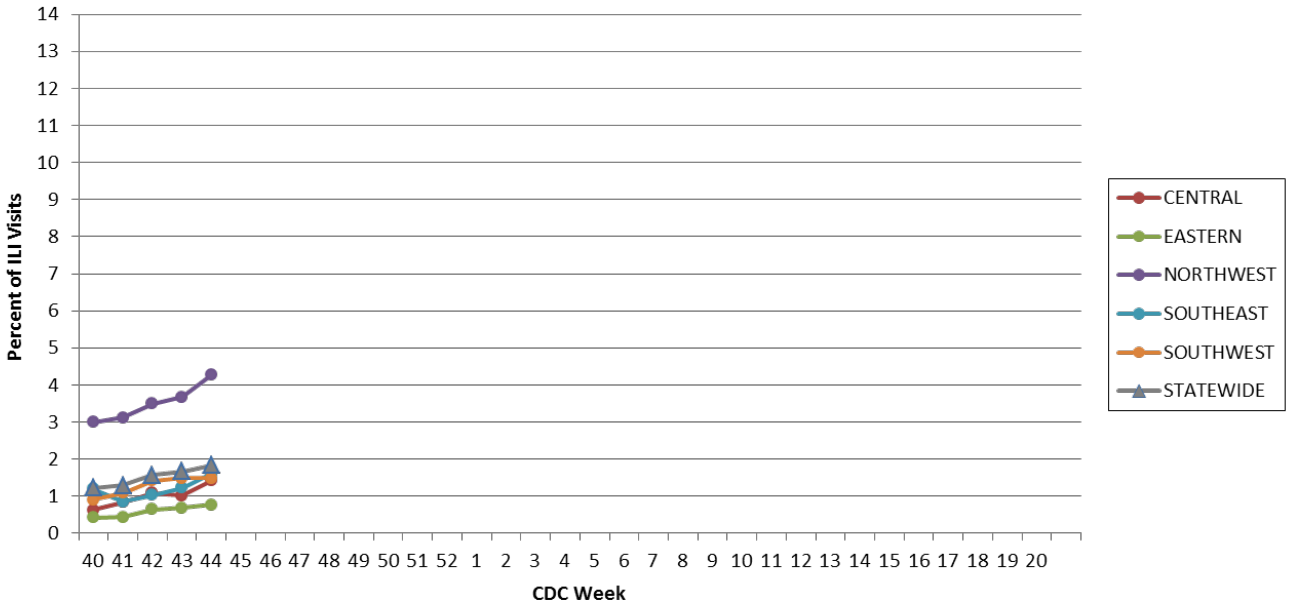
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 44, 2018*



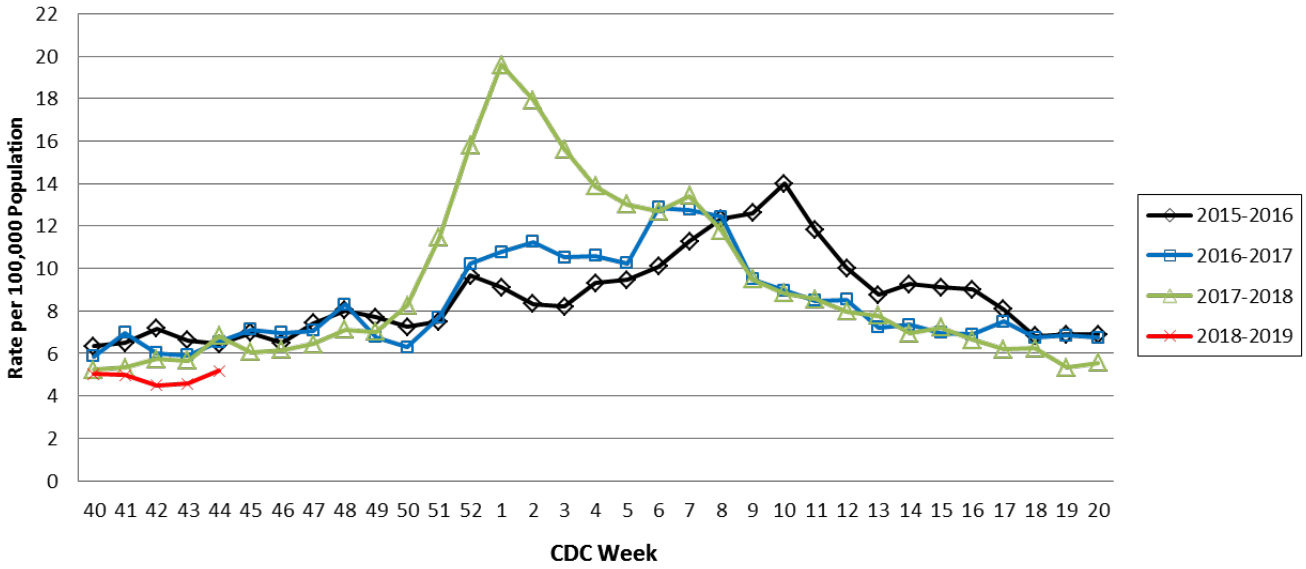
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



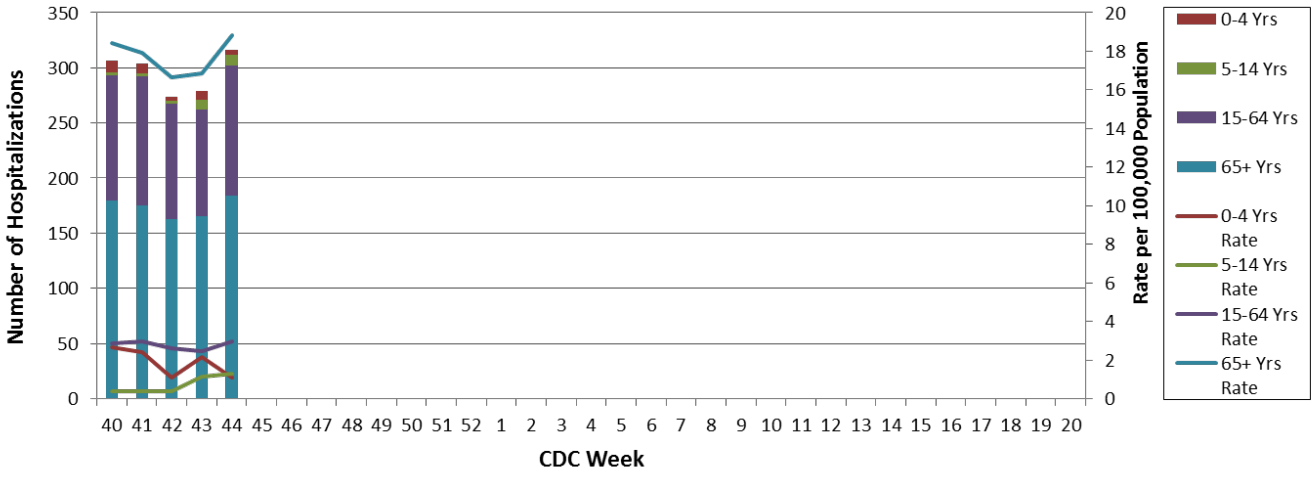
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 44, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 45: November 4 – November 10, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 45, a total of 104 laboratory-positive[3] influenza cases (62 influenza A, 39 influenza B, and three untyped) were reported. A season-to-date total of 983 laboratory-positive influenza cases have been reported in Missouri as of Week 45. The influenza type for reported season-to-date cases includes 59.5% influenza A, 39.9% influenza B and 0.6% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 45. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) also remained low during Week 45 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.04% (Figure 5) and 1.69% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- One influenza-associated death has been reported in Missouri as of Week 45.[5] During Week 44, 51 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 245 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 45.

- Influenza activity remained low in the United States during Week 44. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 45**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 45**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 45 (November 4, 2018 – November 10, 2018)*

Influenza Type	Week 43	Week 44	Week 45	2018-2019* Season-to-Date
Influenza A	97	107	62	585
Influenza B	69	65	39	392
Influenza Unknown Or Untyped	0	2	3	6
Total	166	174	104	983

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 45 (November 4, 2018 – November 10, 2018)*‡

Age Group	Week 45 Cases	Week 45 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	13	3.47	153	40.87
05-24	30	1.87	353	22.00
25-49	41	2.14	264	13.80
50-64	9	0.73	112	9.06
65+	11	1.15	101	10.58
Total	104	1.71	983	16.16

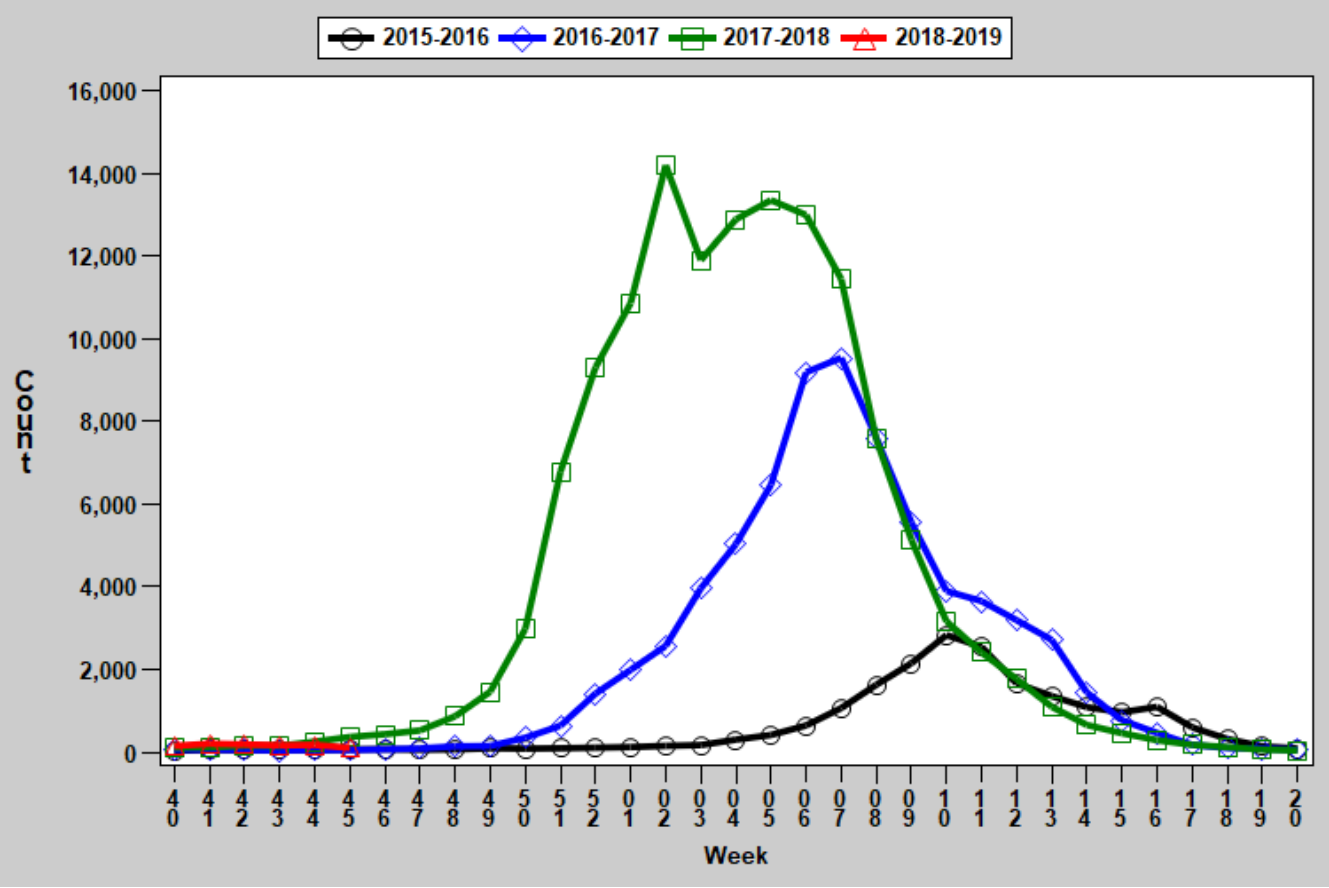
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 45 (November 4, 2018 – November 10, 2018)[*‡]

Region	Week 45 Cases	Week 45 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	9	1.33	129	19.05
Eastern	24	1.06	200	8.83
Northwest	27	1.69	148	9.26
Southeast	30	6.36	378	80.14
Southwest	14	1.31	128	11.95
Total	104	1.71	983	16.16

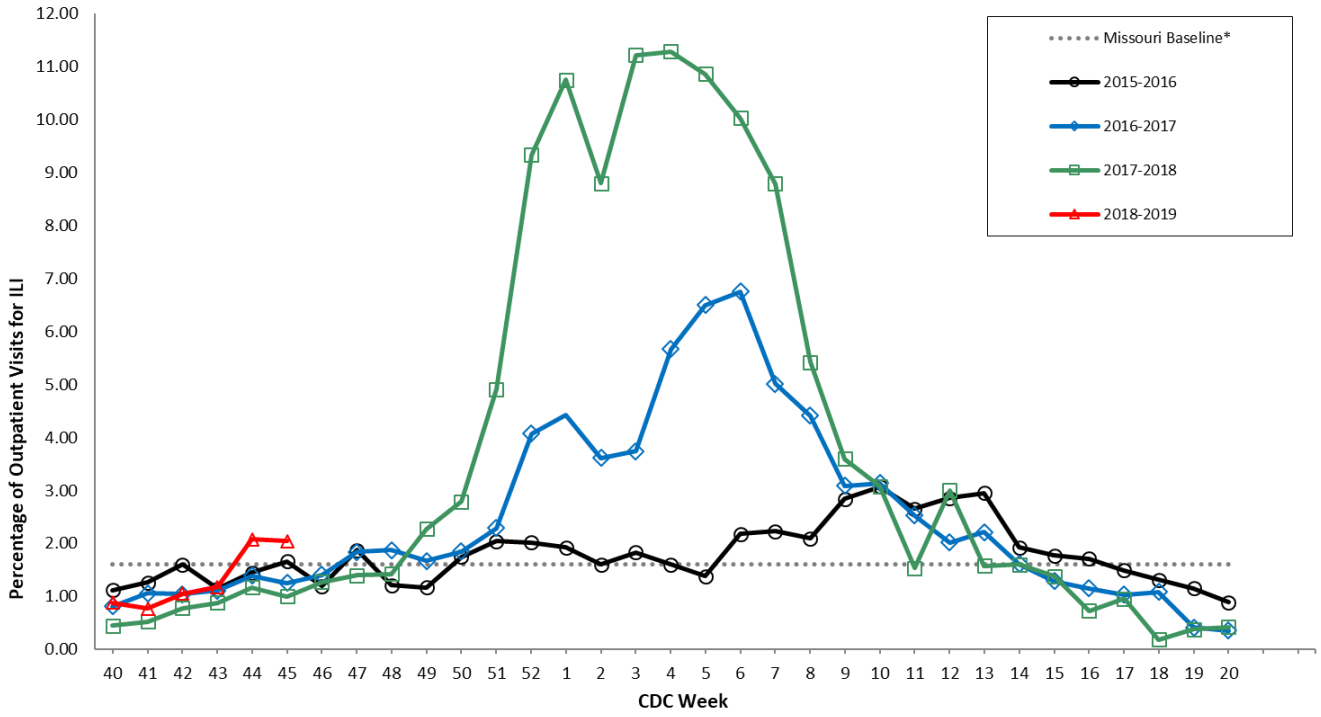
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

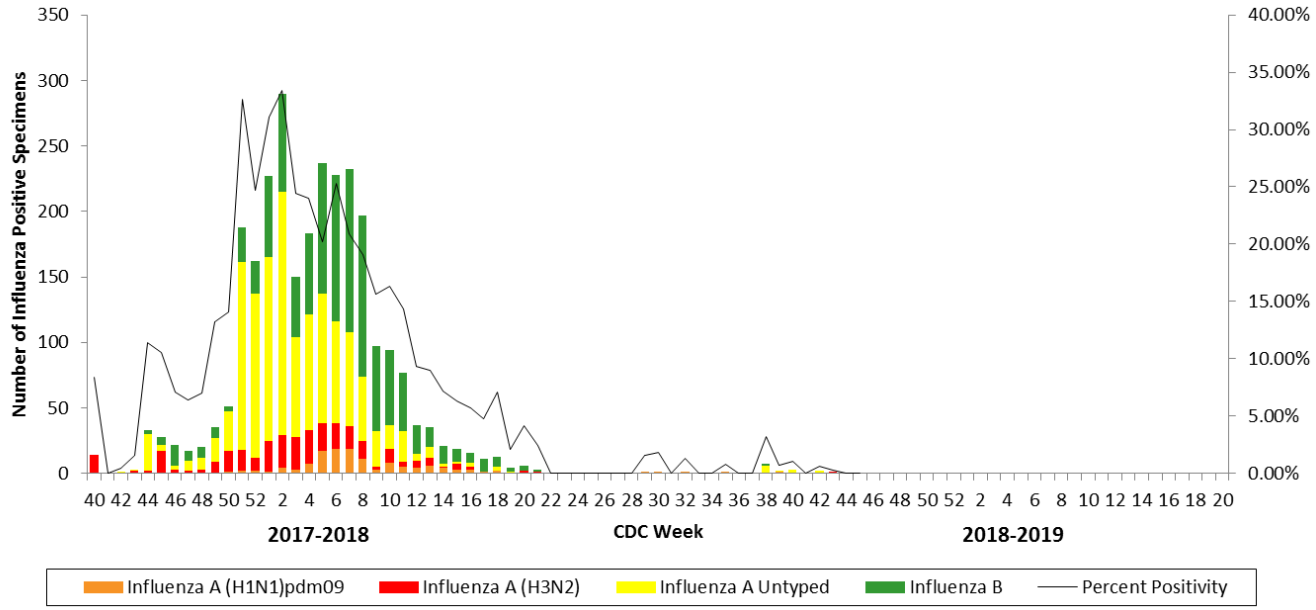
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

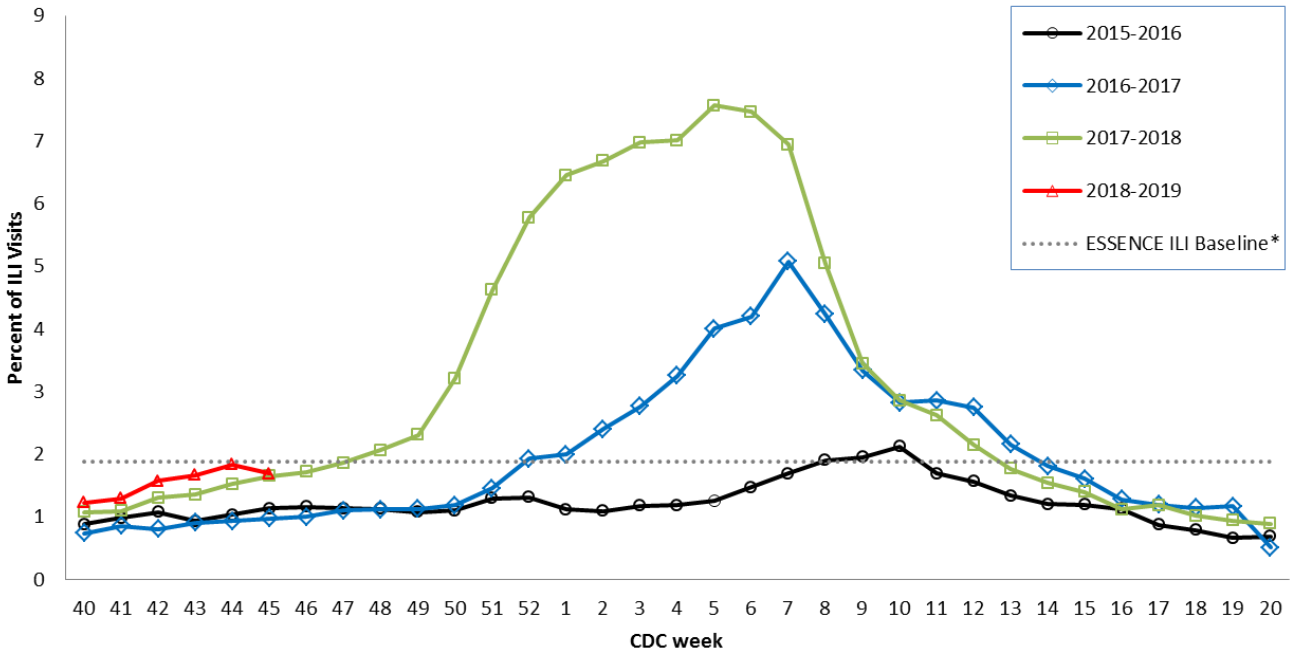
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

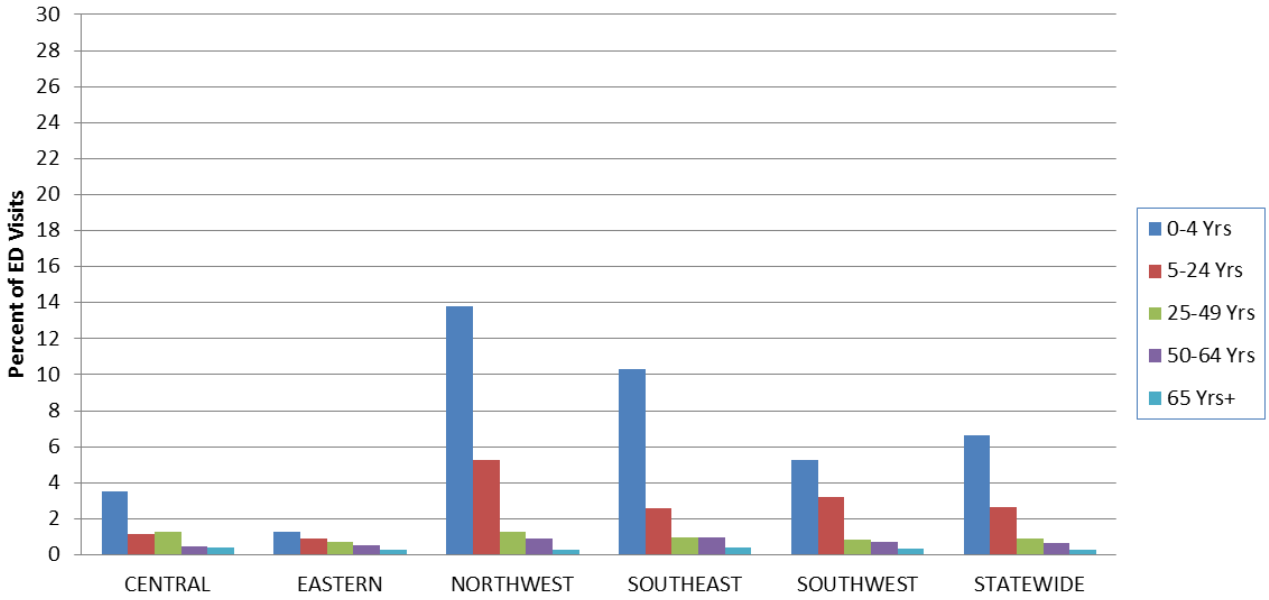
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

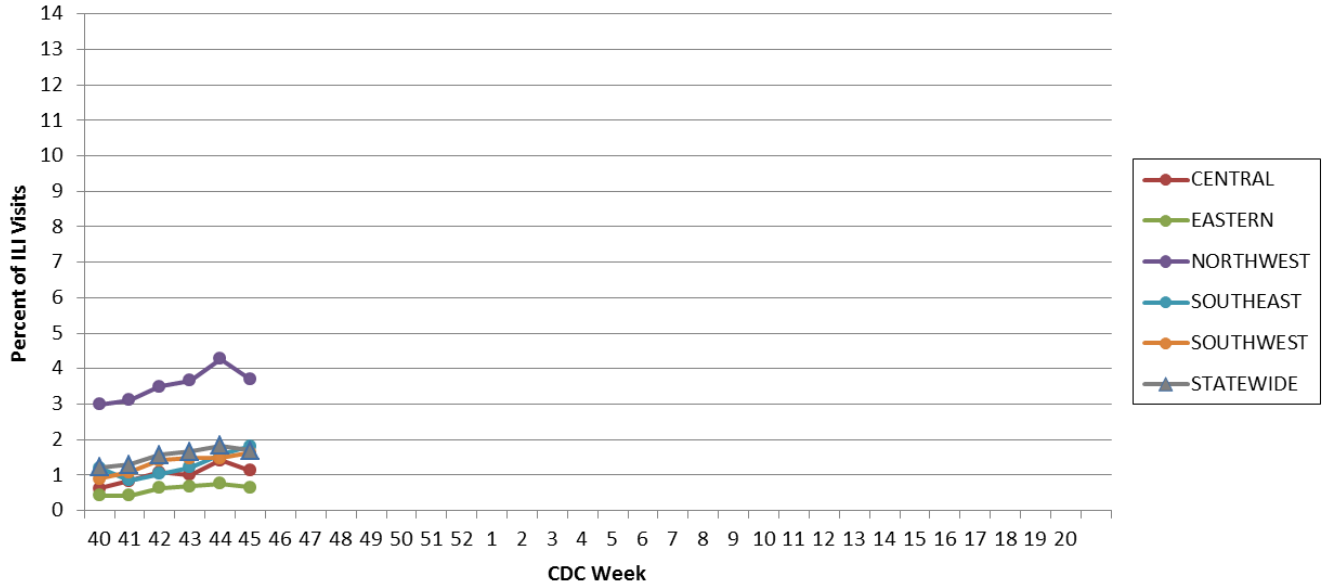
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 45, 2018*



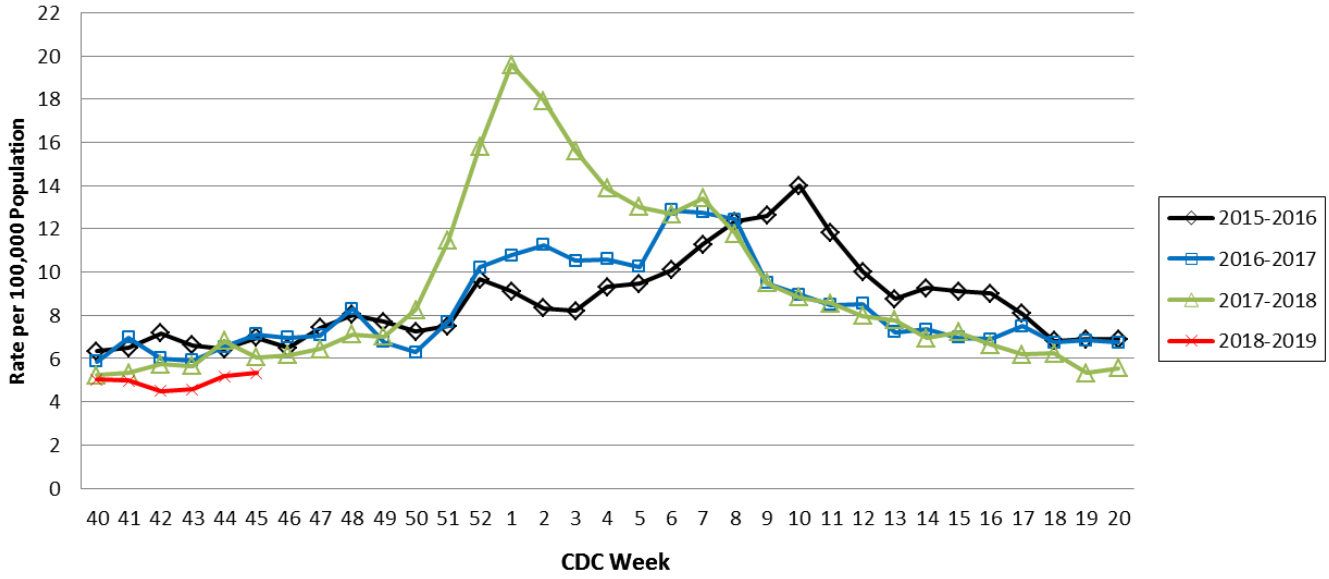
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



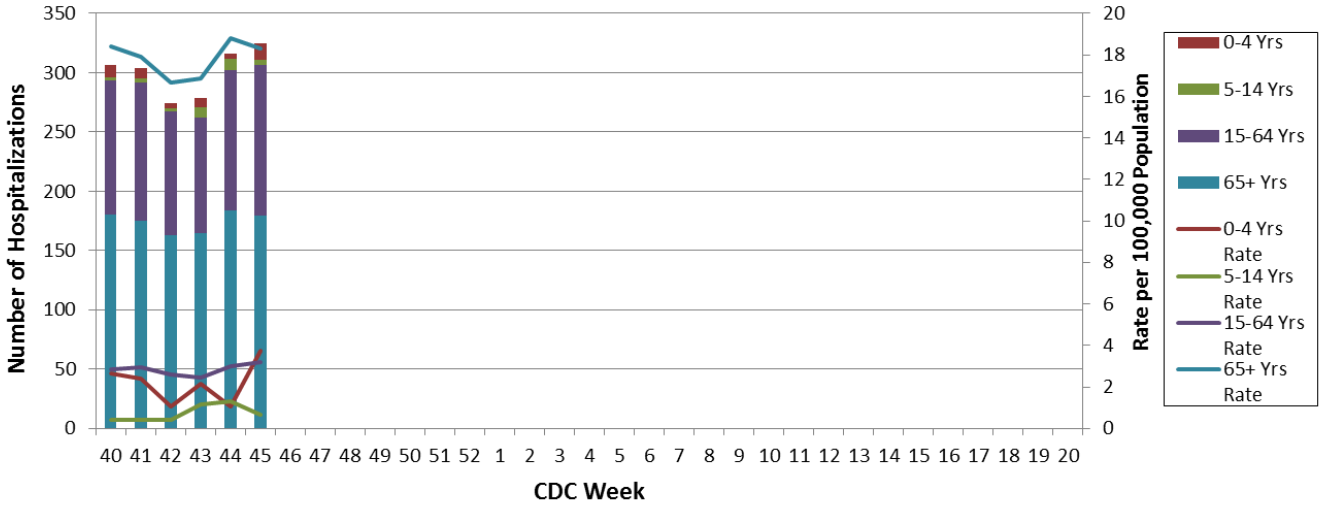
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 45, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 46: November 11 – November 17, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 46, a total of 113 laboratory-positive[3] influenza cases (78 influenza A, 34 influenza B, and one untyped) were reported. A season-to-date total of 1,155 laboratory-positive influenza cases have been reported in Missouri as of Week 46. The influenza type for reported season-to-date cases includes 60.2% influenza A, 39.1% influenza B and 0.7% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 46. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) also remained low during Week 46 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and above baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.66% (Figure 5) and 1.92% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- One influenza-associated death has been reported in Missouri as of Week 46.[5] During Week 45, 44 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 289 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 46.

- Influenza activity remained low in the United States during Week 45. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 46**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 46**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 46 (November 11, 2018 – November 17, 2018)*

Influenza Type	Week 44	Week 45	Week 46	2018-2019* Season-to-Date
Influenza A	109	92	78	696
Influenza B	70	56	34	451
Influenza Unknown Or Untyped	2	4	1	8
Total	181	152	113	1,155

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 46 (November 11, 2018 – November 17, 2018)*‡

Age Group	Week 46 Cases	Week 46 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	23	6.14	187	49.95
05-24	34	2.12	407	25.37
25-49	25	1.31	302	15.78
50-64	18	1.46	136	11.00
65+	13	1.36	123	12.88
Total	113	1.86	1,155	18.99

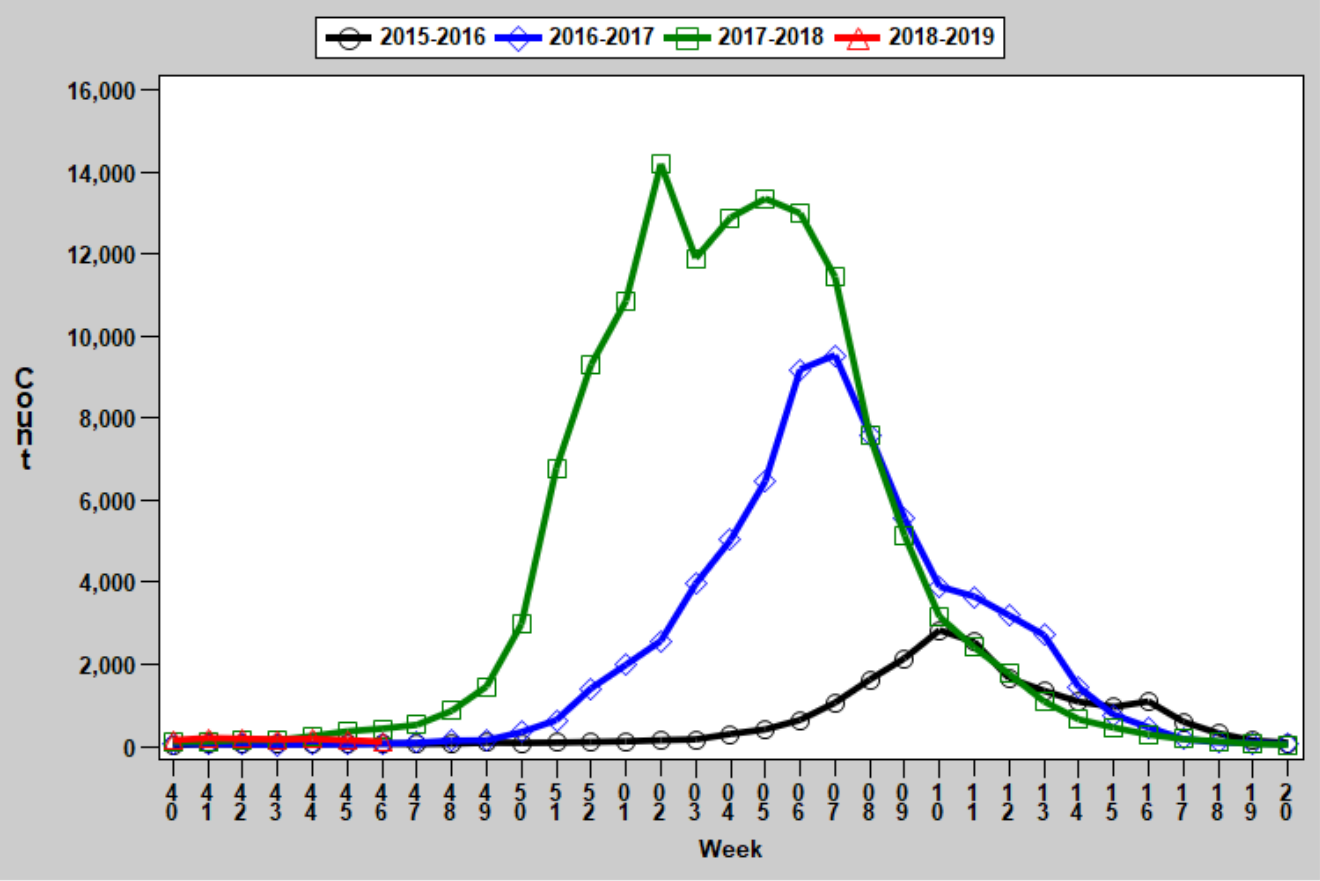
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 46 (November 11, 2018 – November 17, 2018)[*‡]

Region	Week 46 Cases	Week 46 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	10	1.48	146	21.57
Eastern	33	1.46	249	10.99
Northwest	30	1.88	184	11.52
Southeast	21	4.45	429	90.95
Southwest	19	1.77	147	13.72
Total	113	1.86	1,155	18.99

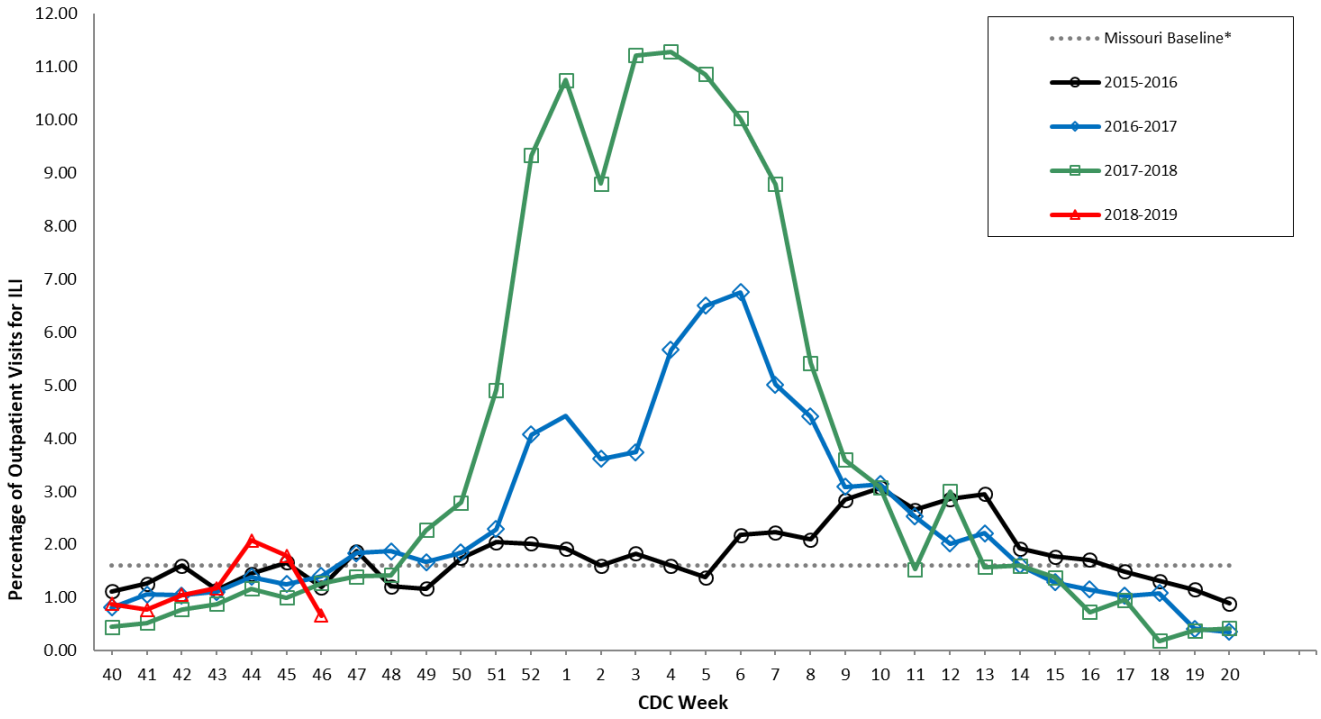
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

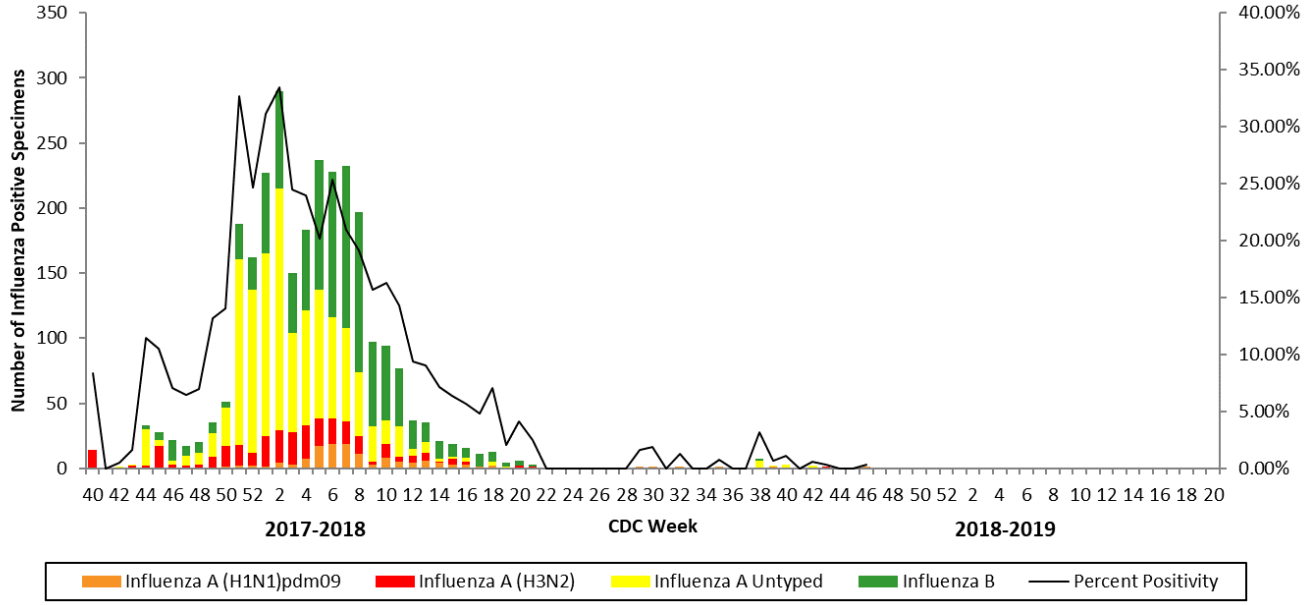
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

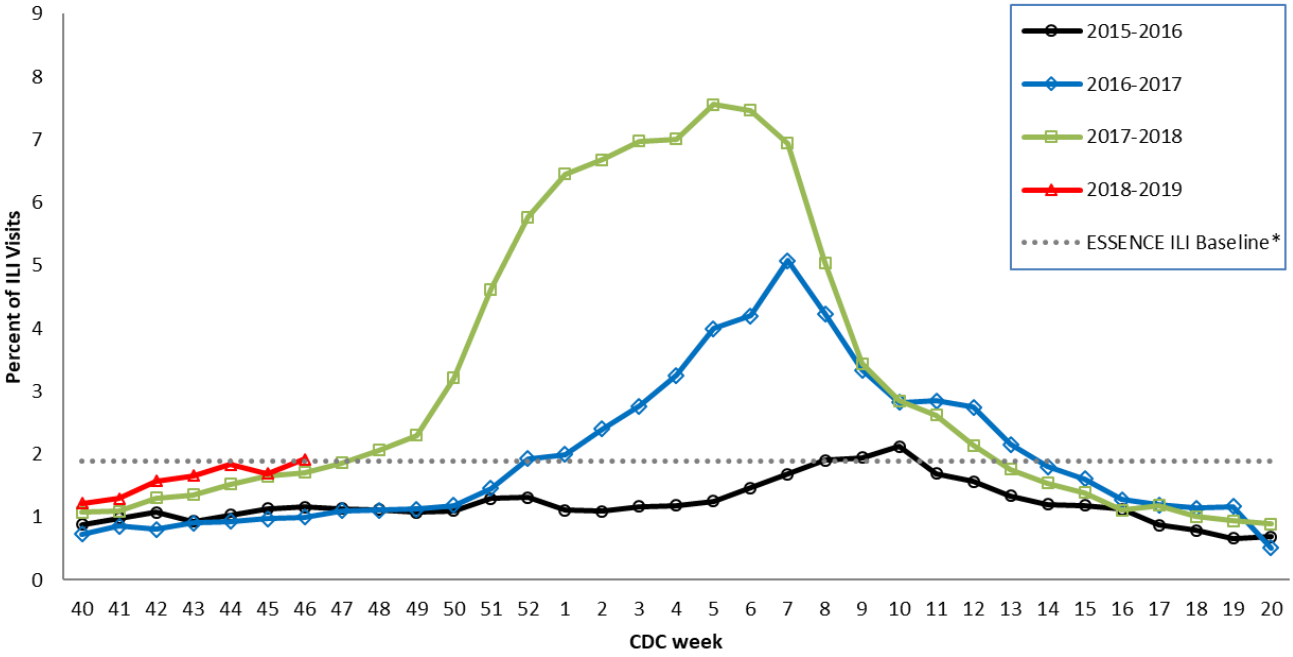
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

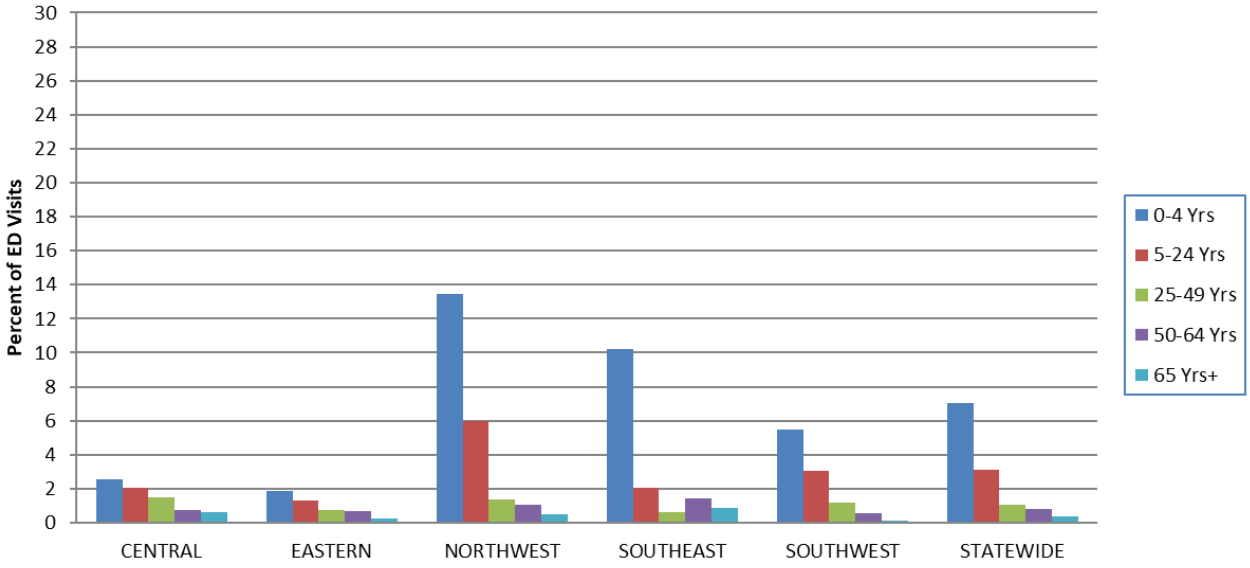
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

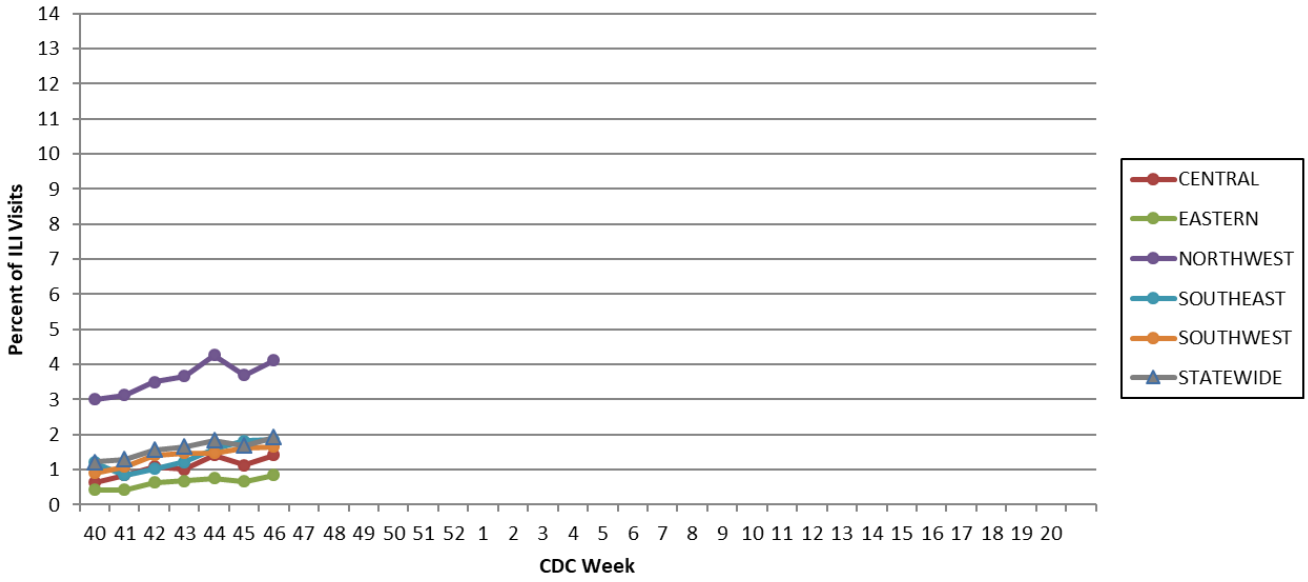
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 46, 2018*



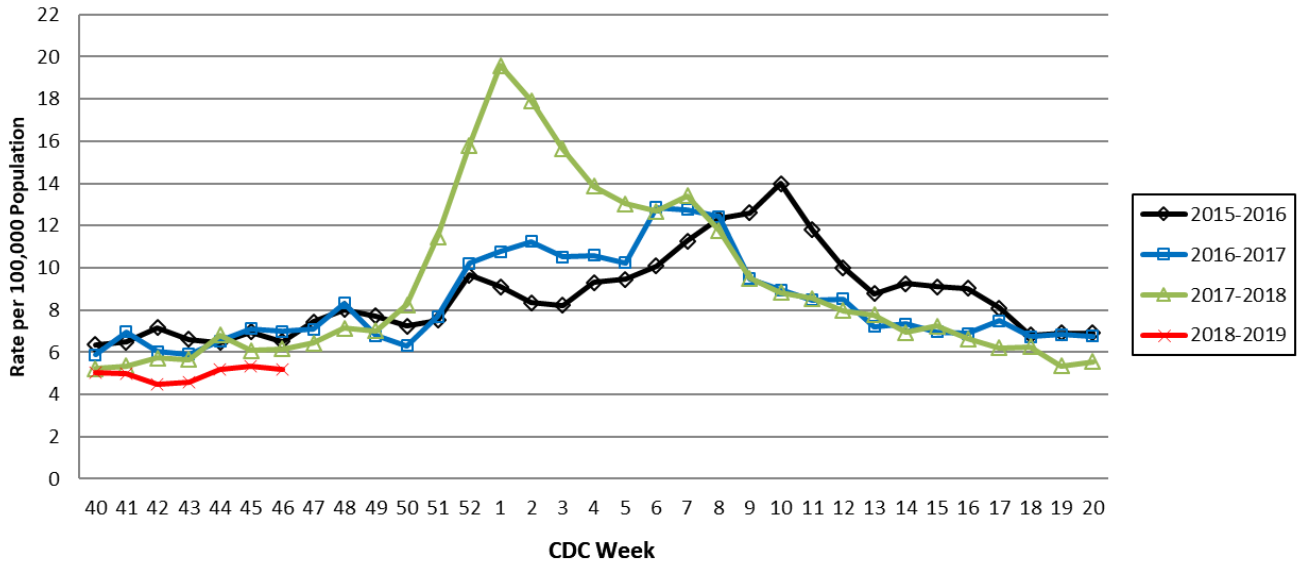
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



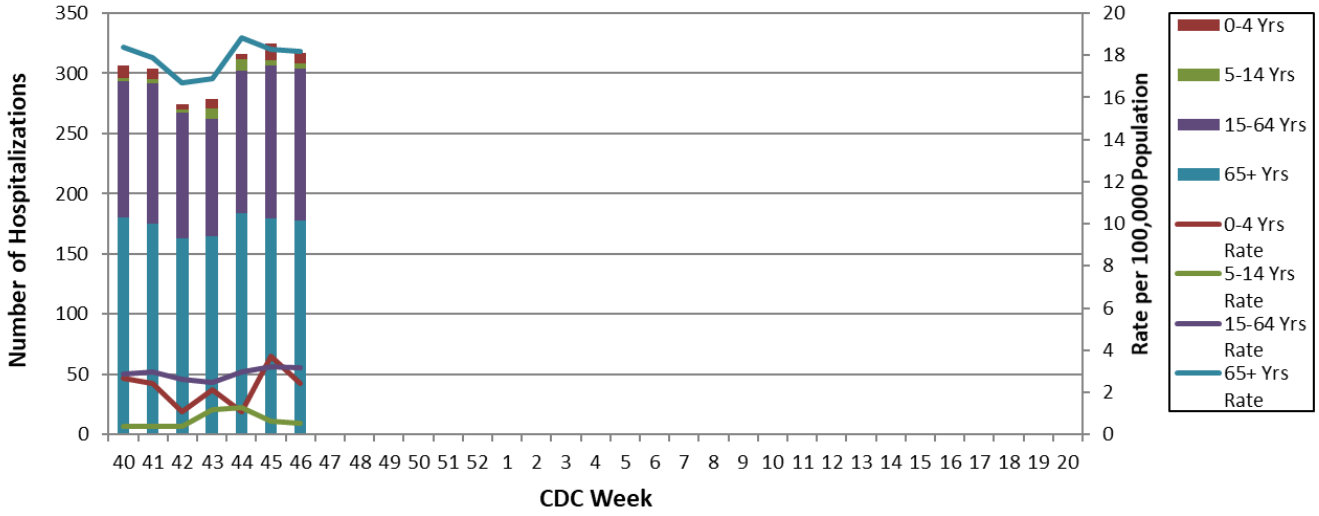
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 46, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 47: November 18 – November 24, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 47, a total of 137 laboratory-positive[3] influenza cases (106 influenza A and 31 influenza B) were reported. A season-to-date total of 1,384 laboratory-positive influenza cases have been reported in Missouri as of Week 47. The influenza type for reported season-to-date cases includes 61.5% influenza A, 37.9% influenza B and 0.6% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 47. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 47 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.43% (Figure 5) and 1.85% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- One influenza-associated death has been reported in Missouri as of Week 47.[5] During Week 46, 24 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 313 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 47.

- Influenza activity remained low in the United States during Week 46. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 47**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 47**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 47 (November 18, 2018 – November 24, 2018)*

Influenza Type	Week 45	Week 46	Week 47	2018-2019* Season-to-Date
Influenza A	107	94	106	851
Influenza B	71	50	31	525
Influenza Unknown Or Untyped	4	1	0	8
Total	182	145	137	1,384

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 47 (November 18, 2018 – November 24, 2018)*‡

Age Group	Week 47 Cases	Week 47 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	24	6.41	224	59.84
05-24	36	2.24	477	29.73
25-49	35	1.83	363	18.97
50-64	17	1.37	168	13.59
65+	25	2.62	152	15.92
Total	137	2.25	1,384	22.75

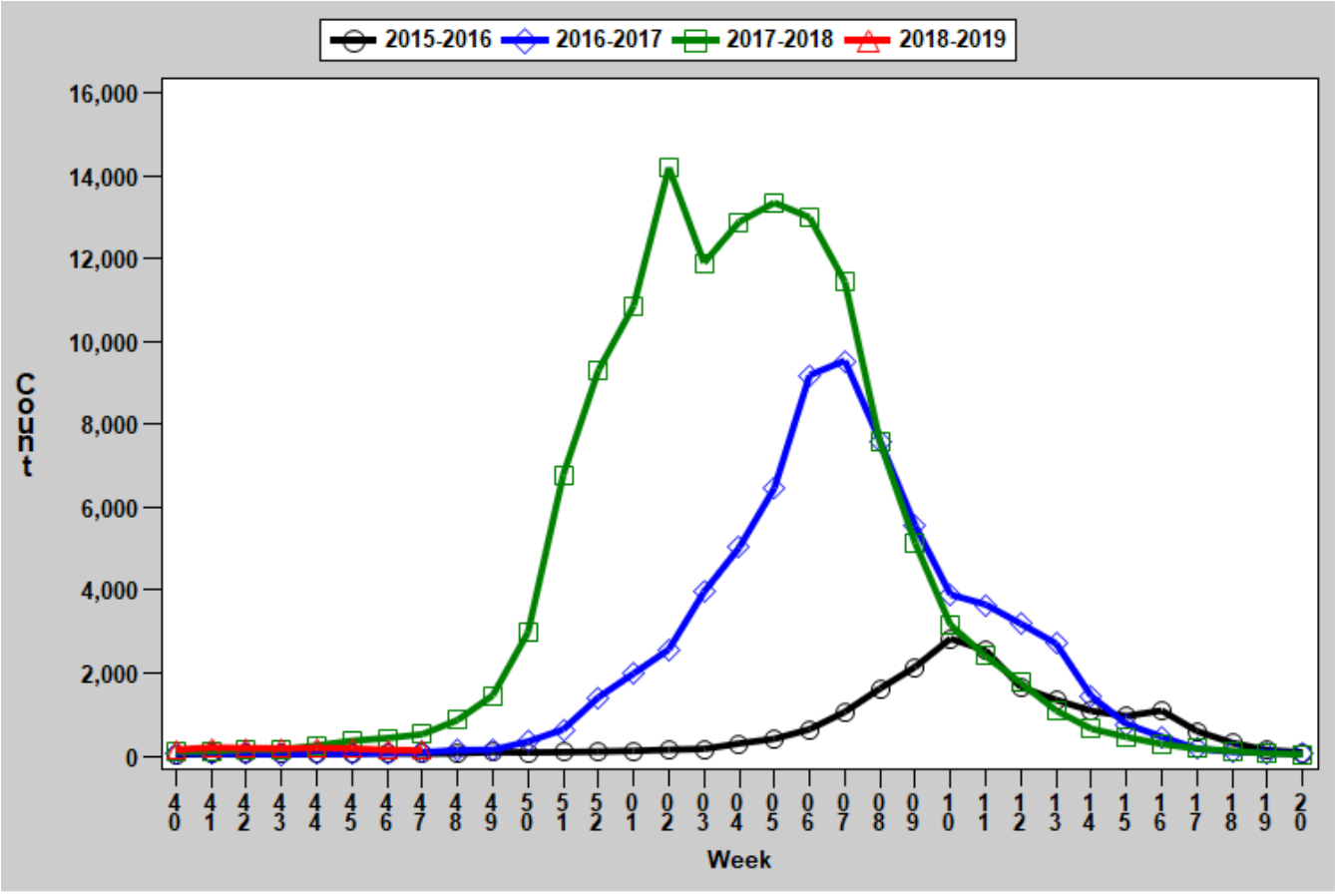
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 47 (November 18, 2018 – November 24, 2018)[*‡]

Region	Week 47 Cases	Week 47 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	14	2.07	161	23.78
Eastern	45	1.99	349	15.40
Northwest	37	2.32	229	14.33
Southeast	10	2.12	443	93.92
Southwest	31	2.89	202	18.86
Total	137	2.25	1,384	22.75

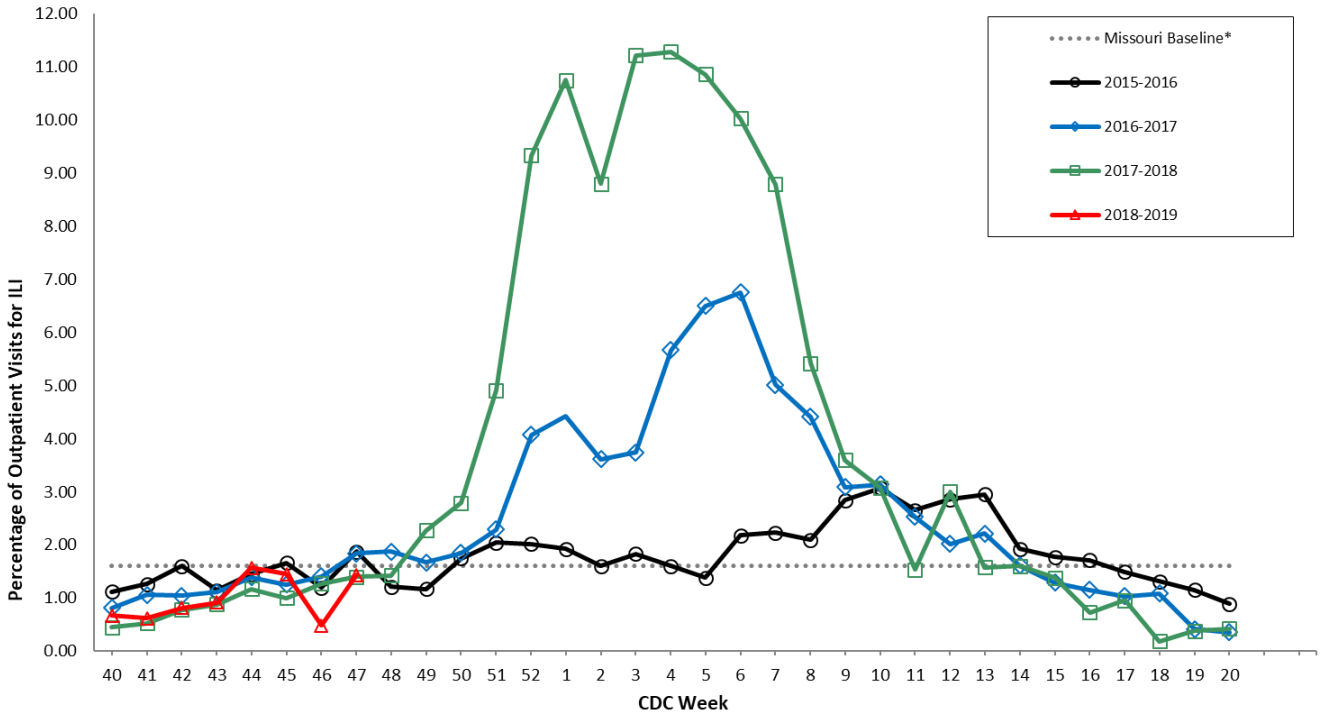
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

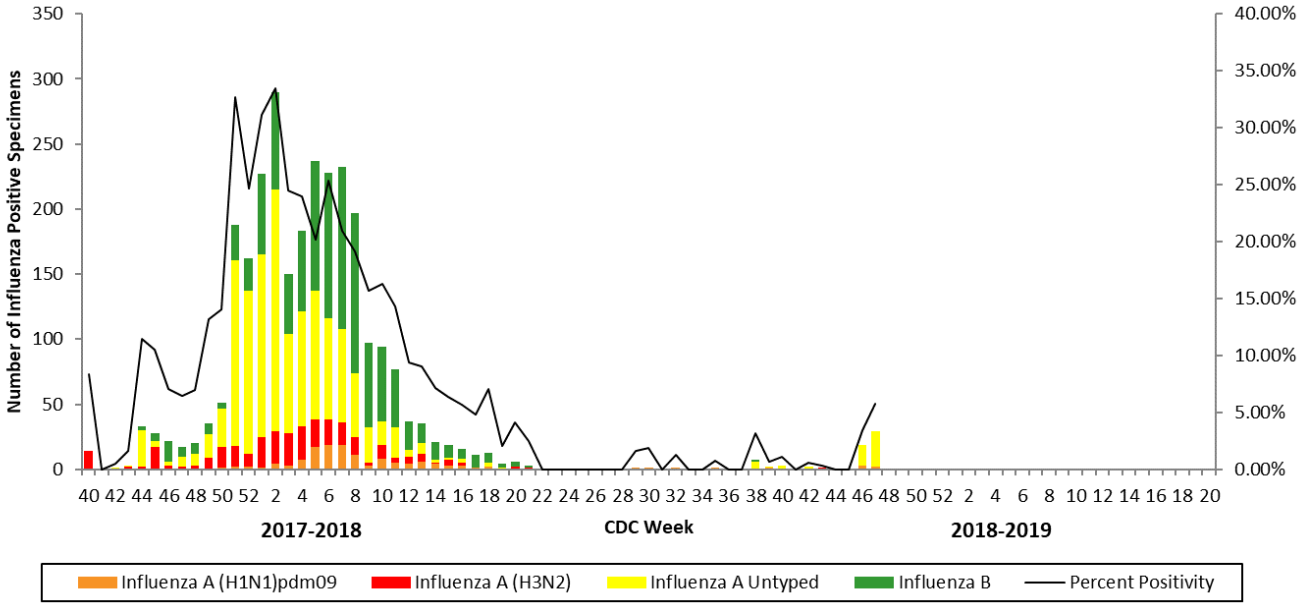
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

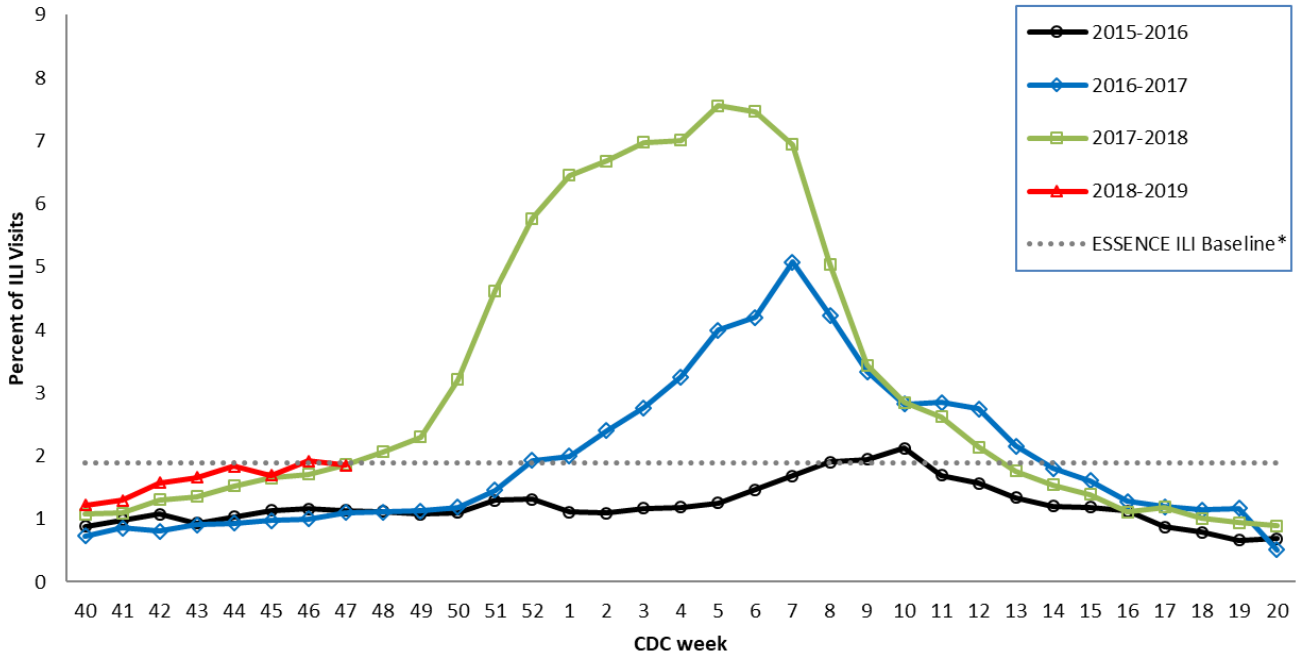
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

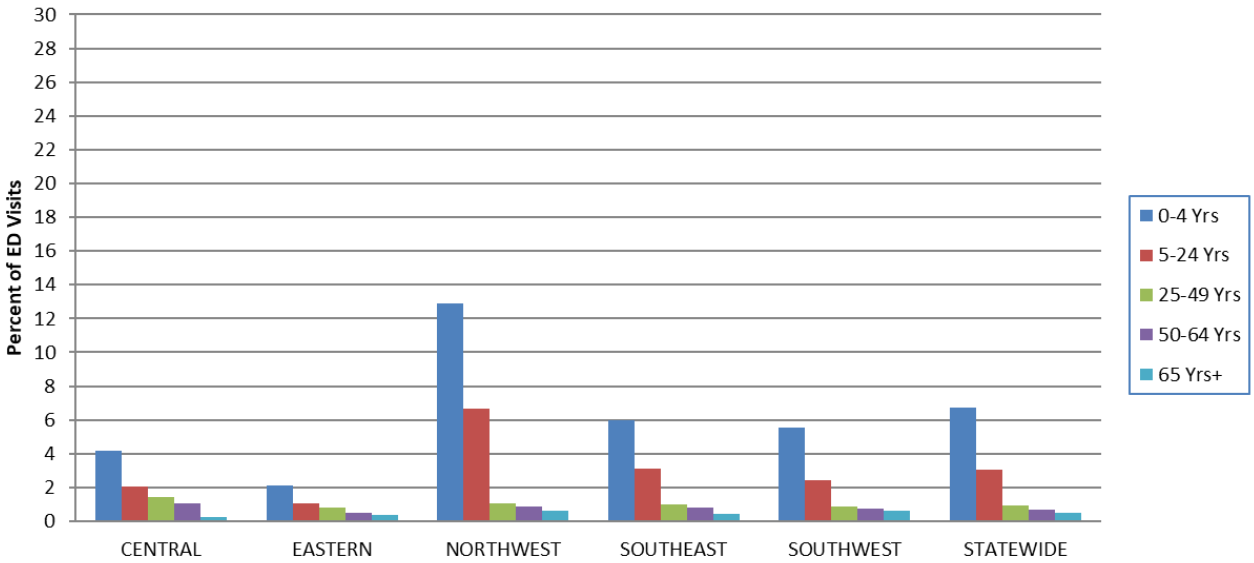
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

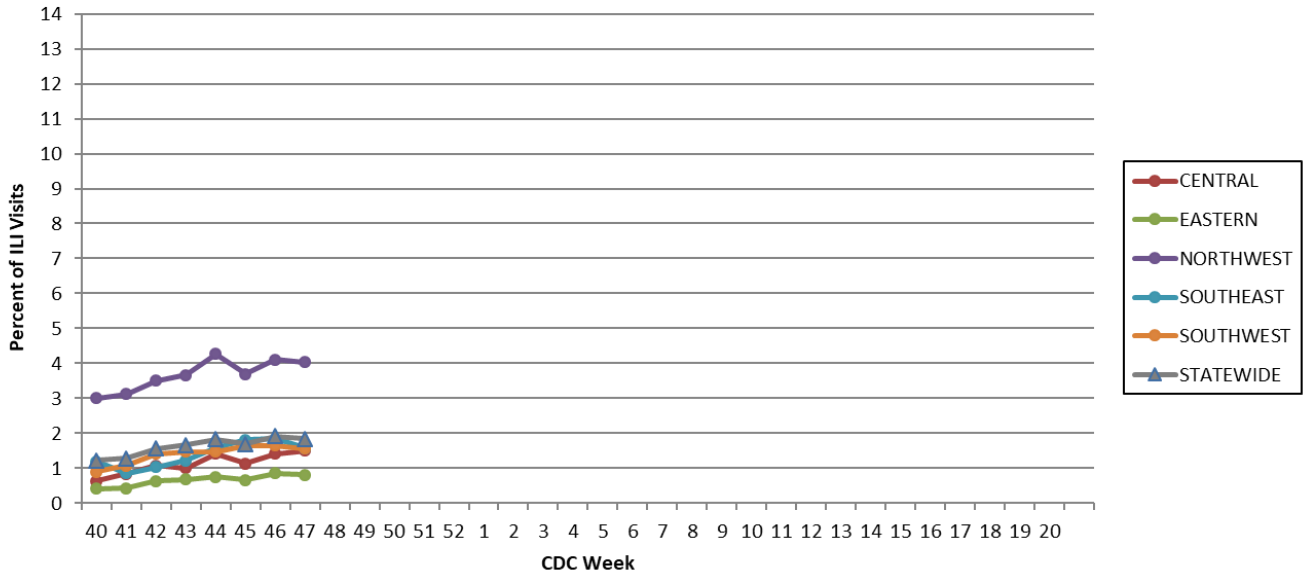
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 47, 2018*



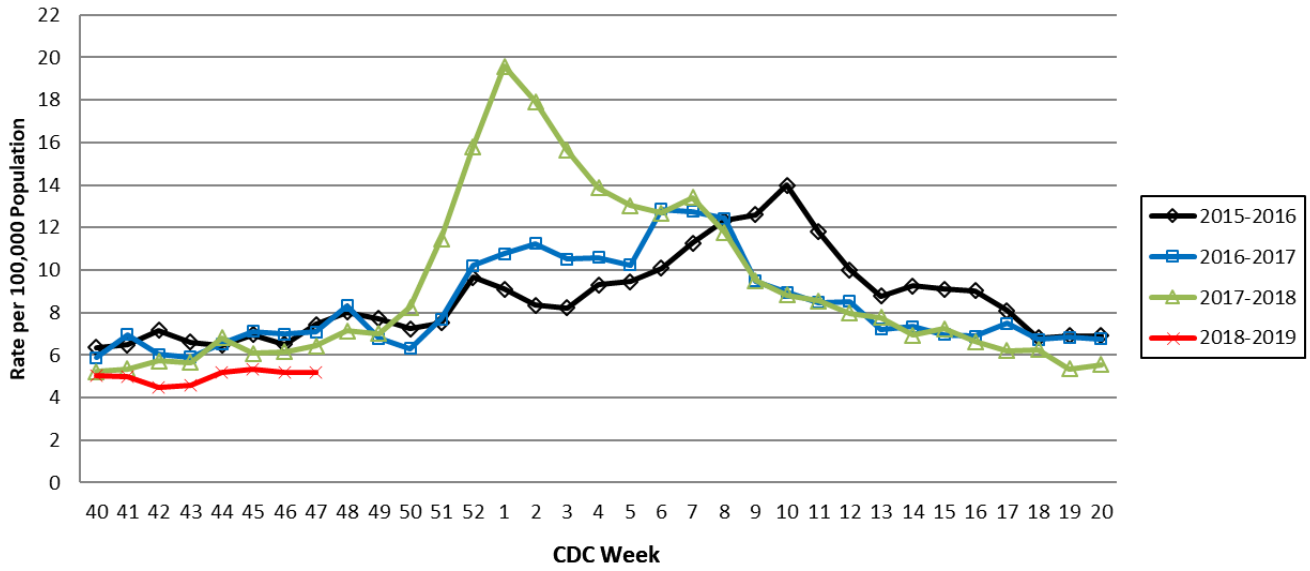
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



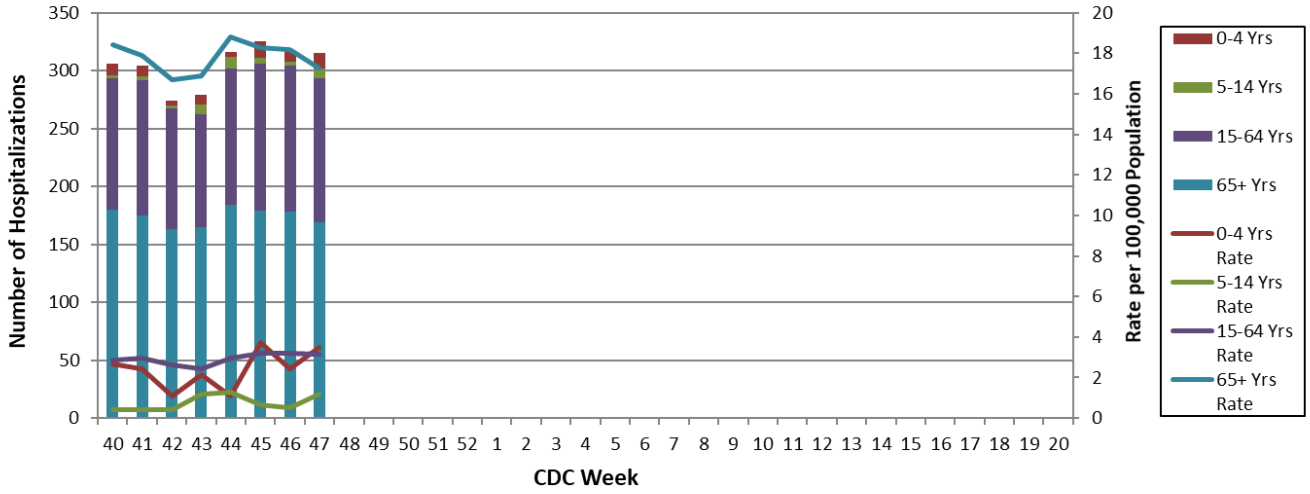
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 47, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 48: November 25 – December 1, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 48, a total of 195 laboratory-positive[3] influenza cases (128 influenza A, 64 influenza B, and three untyped) were reported. A season-to-date total of 1,658 laboratory-positive influenza cases have been reported in Missouri as of Week 48. The influenza type for reported season-to-date cases includes 61.6% influenza A, 37.3% influenza B and 1.1% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 48. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 48 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.58 % (Figure 5) and 1.72% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Two influenza-associated deaths have been reported in Missouri as of Week 48.[5] During Week 47, 37 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 350 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 48.

- Influenza activity in the United States increased slightly during Week 47. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 48**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 48**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 48 (November 25, 2018 – December 1, 2018)*

Influenza Type	Week 46	Week 47	Week 48	2018-2019* Season-to-Date
Influenza A	99	132	128	1,022
Influenza B	58	41	64	619
Influenza Unknown Or Untyped	2	3	3	17
Total	159	176	195	1,658

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 48 (November 25, 2018 – December 1, 2018)*‡

Age Group	Week 48 Cases	Week 48 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	45	12.02	284	75.86
05-24	61	3.80	562	35.03
25-49	50	2.61	434	22.68
50-64	23	1.86	204	16.50
65+	16	1.68	174	18.22
Total	195	3.21	1,658	27.25

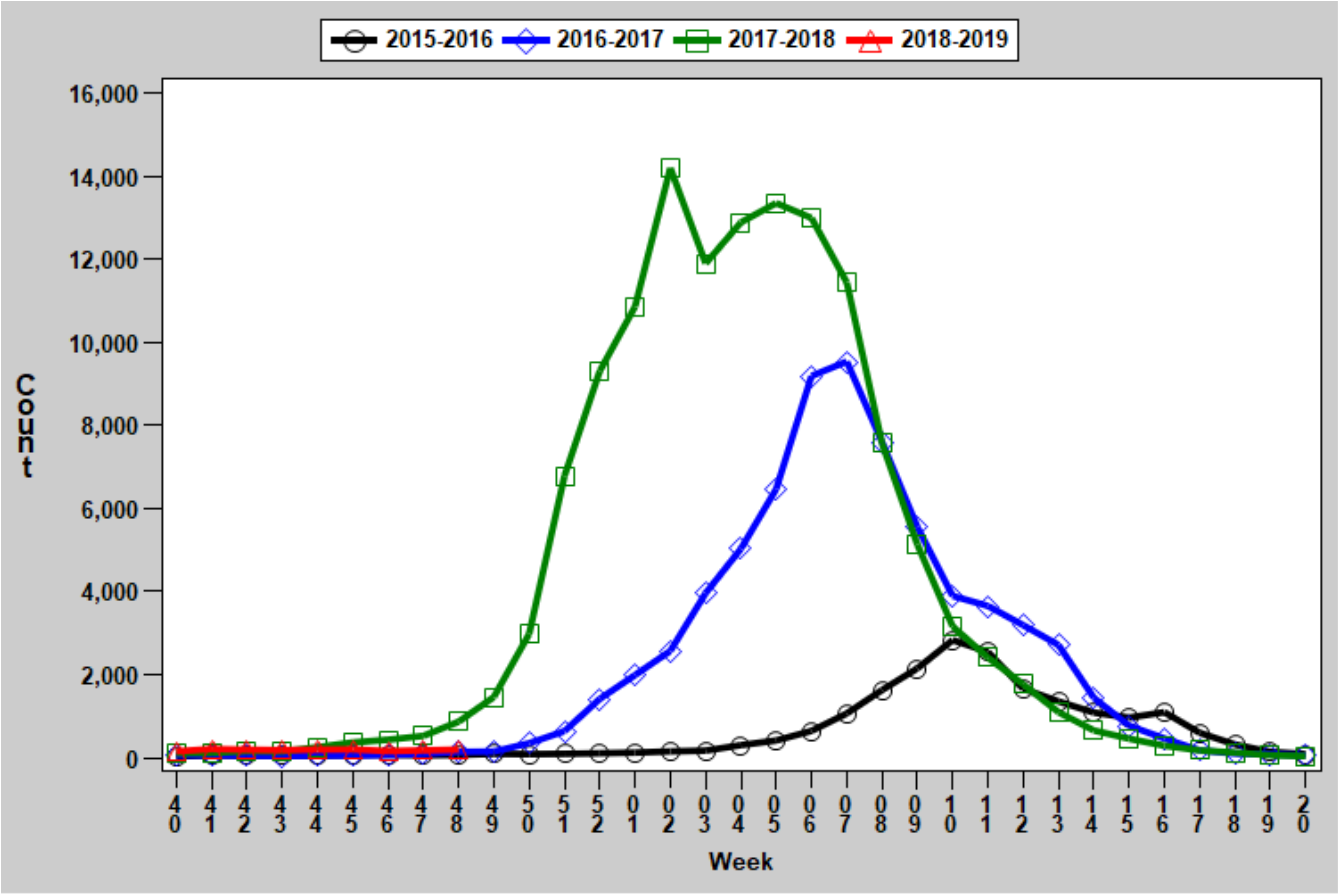
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 48 (November 25, 2018 – December 1, 2018)[*‡]

Region	Week 48 Cases	Week 48 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	12	1.77	180	26.59
Eastern	46	2.03	403	17.78
Northwest	78	4.88	326	20.41
Southeast	42	8.90	514	108.97
Southwest	17	1.59	235	21.94
Total	195	3.21	1,658	27.25

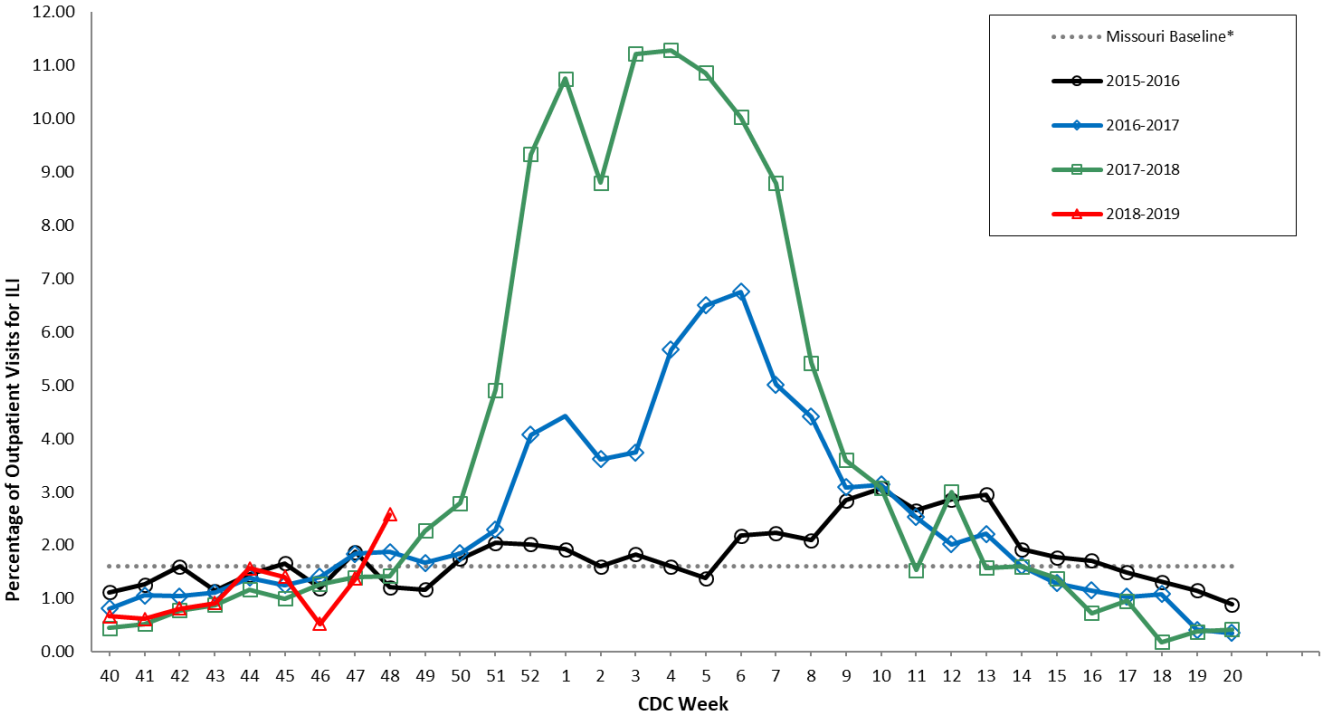
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

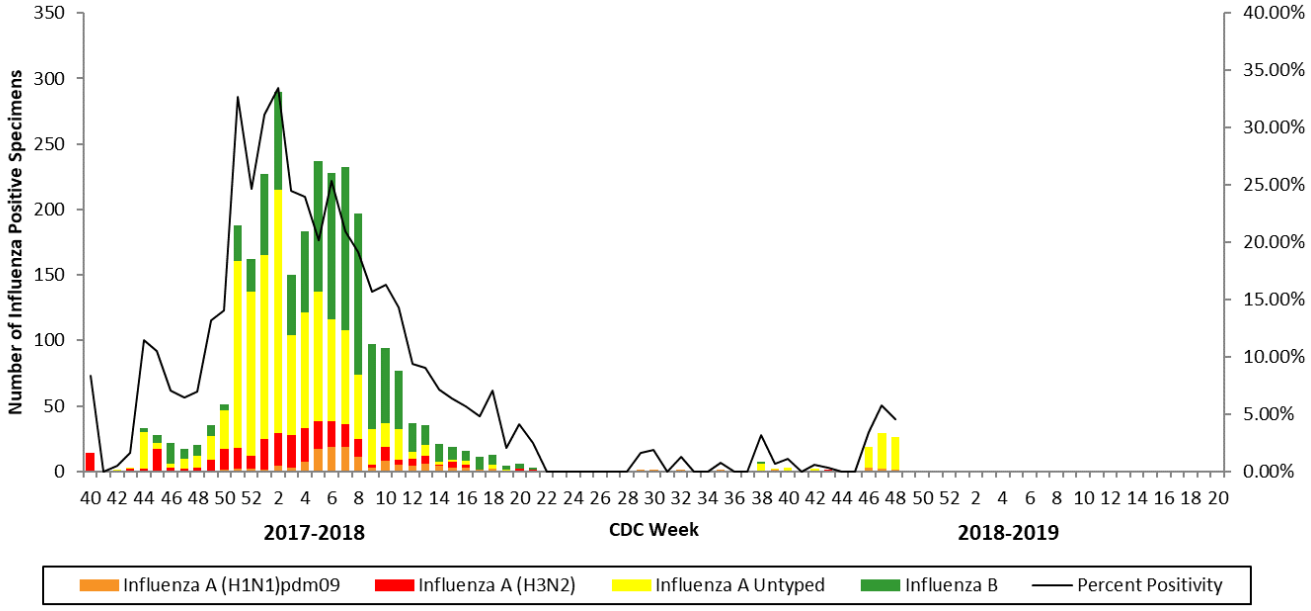
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

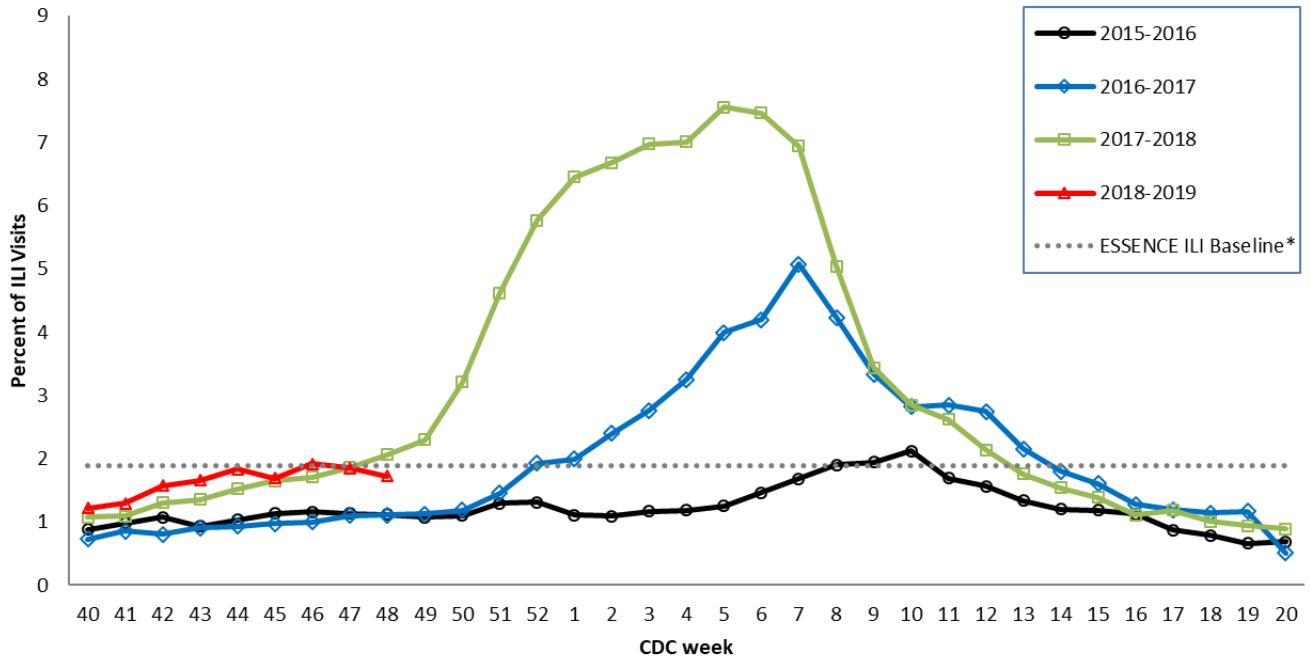
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

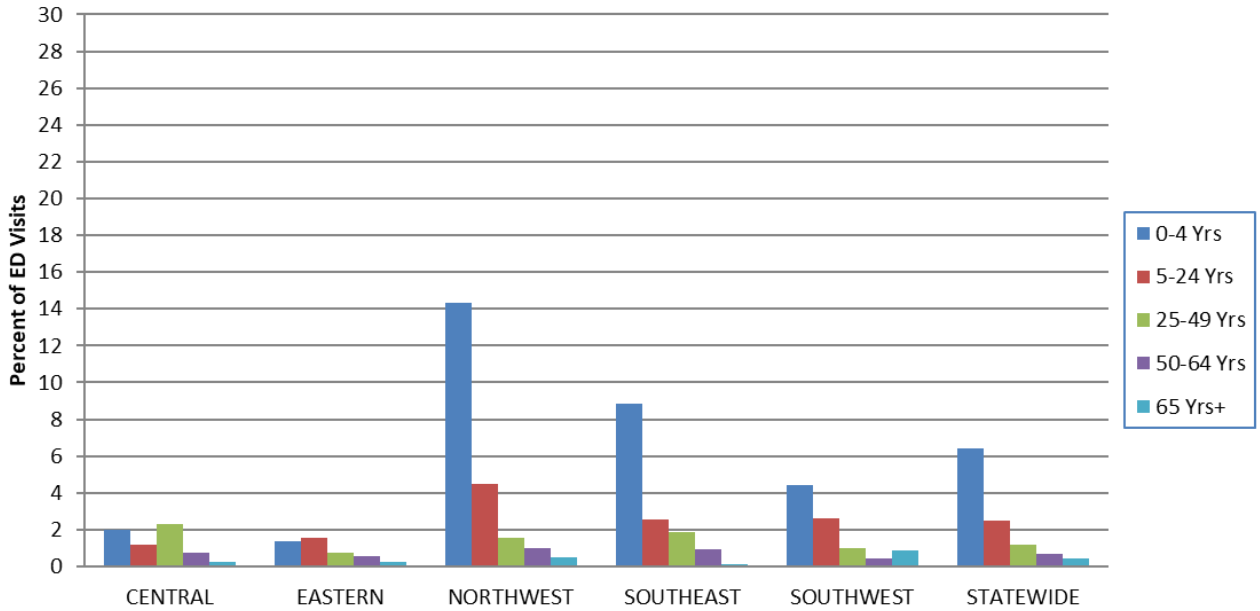
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

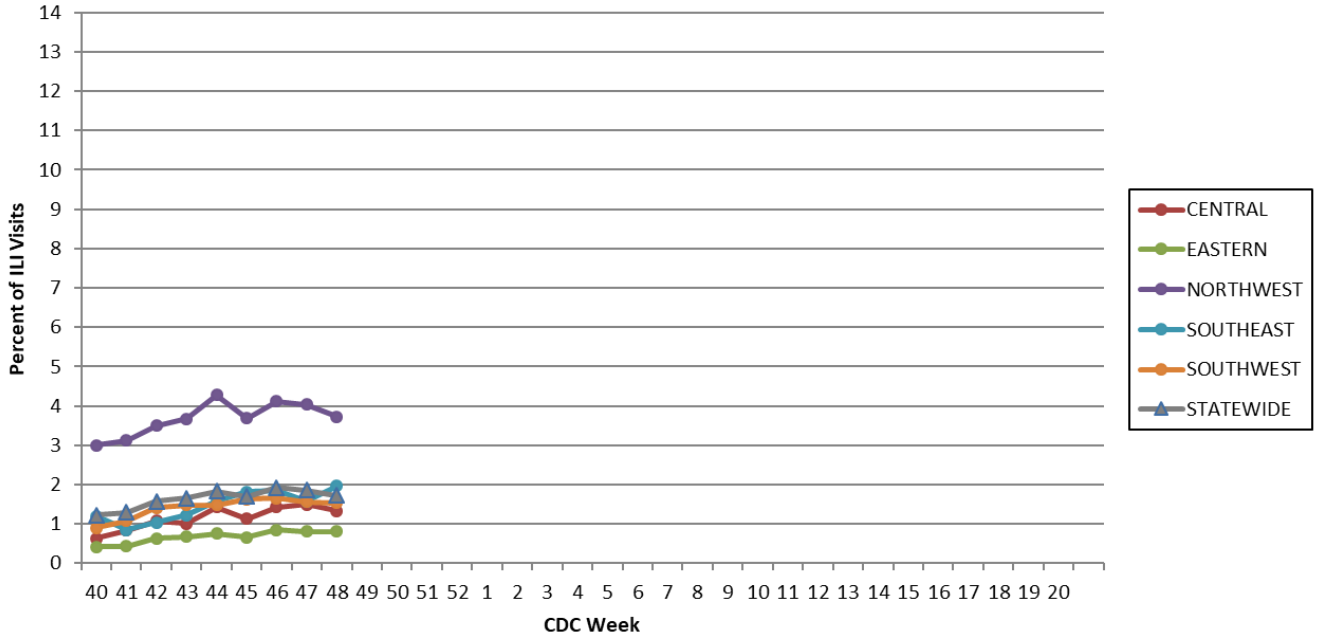
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 48, 2018*



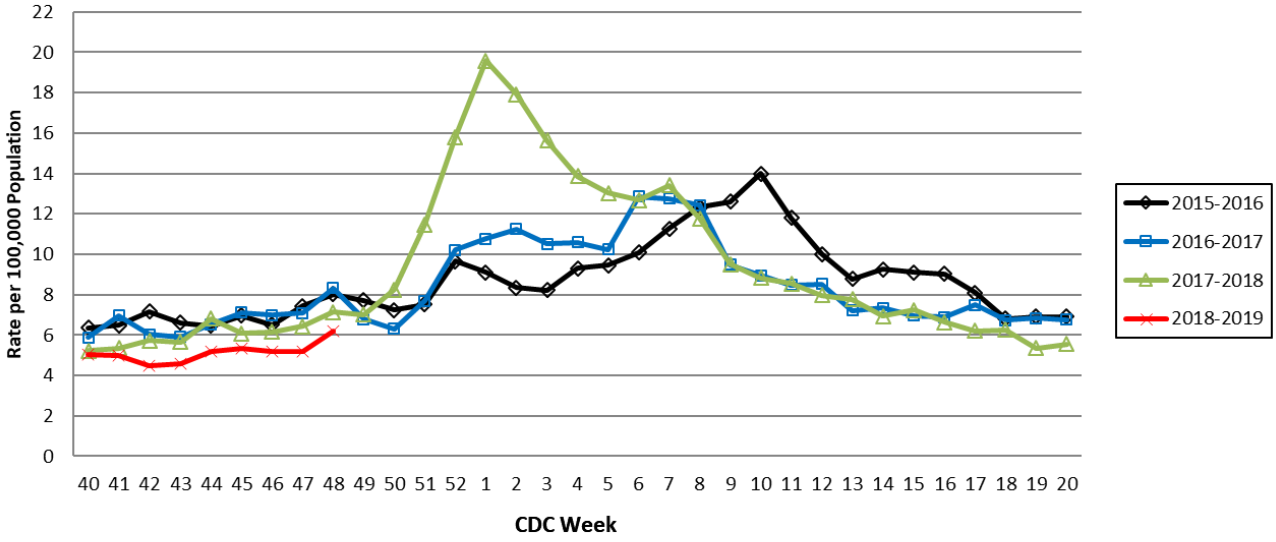
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



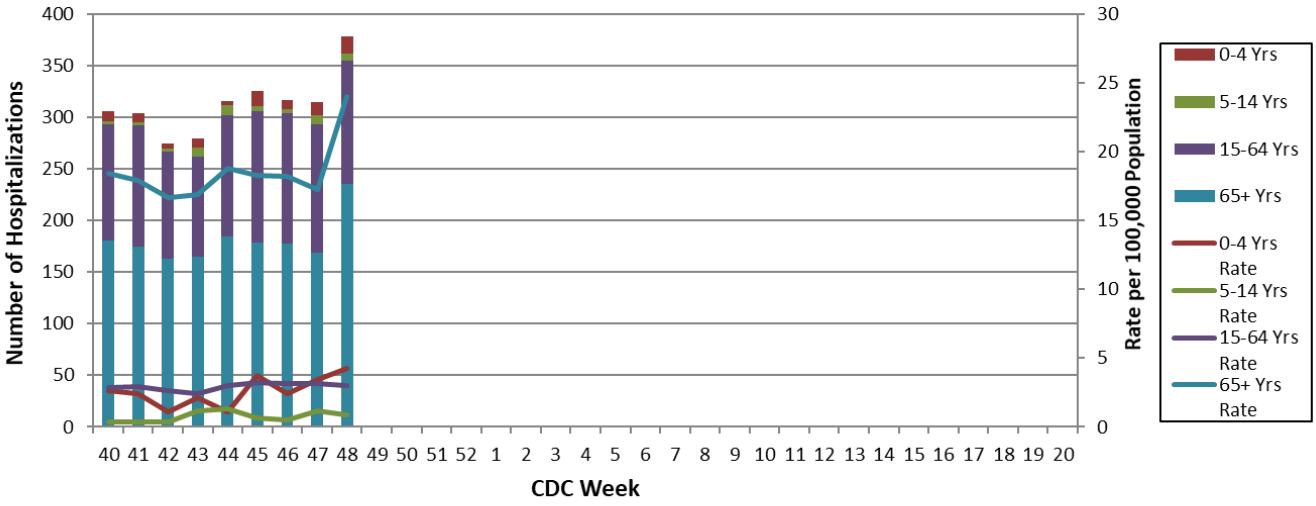
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 48, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 49: December 2 – December 8, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 49, a total of 210 laboratory-positive[3] influenza cases (158 influenza A, 49 influenza B, and three untyped) were reported. A season-to-date total of 1,997 laboratory-positive influenza cases have been reported in Missouri as of Week 49. The influenza type for reported season-to-date cases includes 63.2% influenza A, 35.7% influenza B and 1.1% untyped. There was one laboratory-positive case of influenza (influenza A, H1) reported by the Missouri State Public Health Laboratory (MSPHL) during Week 49. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 49 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.37 % (Figure 5) and 1.83% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Two influenza-associated deaths have been reported in Missouri as of Week 49.[5] During Week 48, 65 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 415 P&I associated deaths in Missouri.[6]

- No influenza or ILI-associated outbreaks or school closures have been reported in Missouri as of Week 49.

- Influenza activity in the United States increased slightly during Week 48. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staini7ng (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 49**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 49**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 49 (December 2, 2018 – December 8, 2018)*

Influenza Type	Week 47	Week 48	Week 49	2018-2019* Season-to-Date
Influenza A	149	179	158	1,263
Influenza B	51	98	49	713
Influenza Unknown Or Untyped	3	4	3	21
Total	203	281	210	1,997

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 49 (December 2, 2018 – December 8, 2018)*‡

Age Group	Week 49 Cases	Week 49 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	54	14.42	352	94.03
05-24	82	5.11	686	42.75
25-49	47	2.46	523	27.33
50-64	19	1.54	242	19.57
65+	8	0.84	194	20.32
Total	210	3.45	1,997	32.83

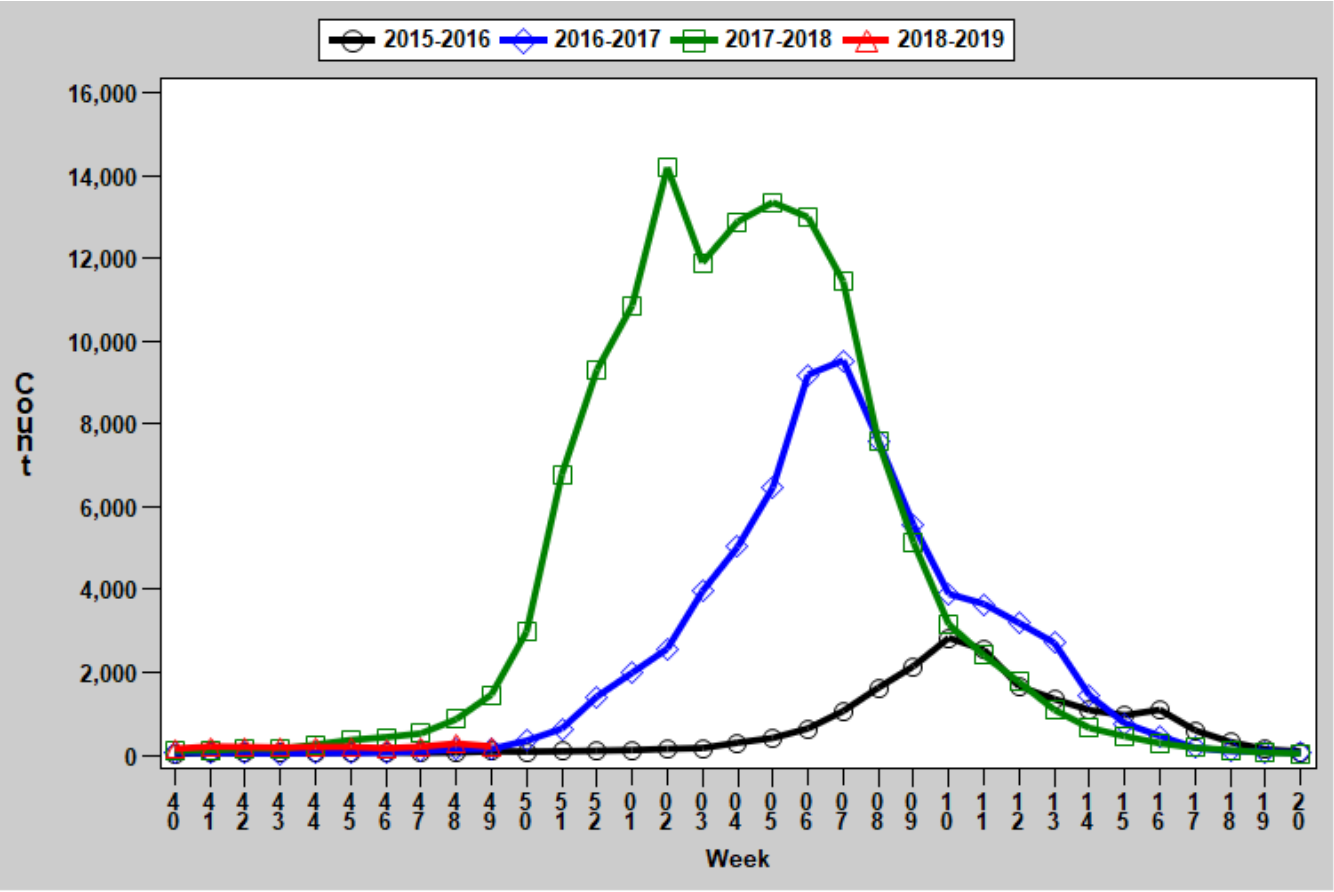
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 49 (December 2, 2018 – December 8, 2018)[*‡]

Region	Week 49 Cases	Week 49 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	22	3.25	213	31.46
Eastern	38	1.68	484	21.36
Northwest	111	6.95	446	27.92
Southeast	25	5.30	561	118.93
Southwest	14	1.31	293	27.35
Total	210	3.45	1,997	32.83

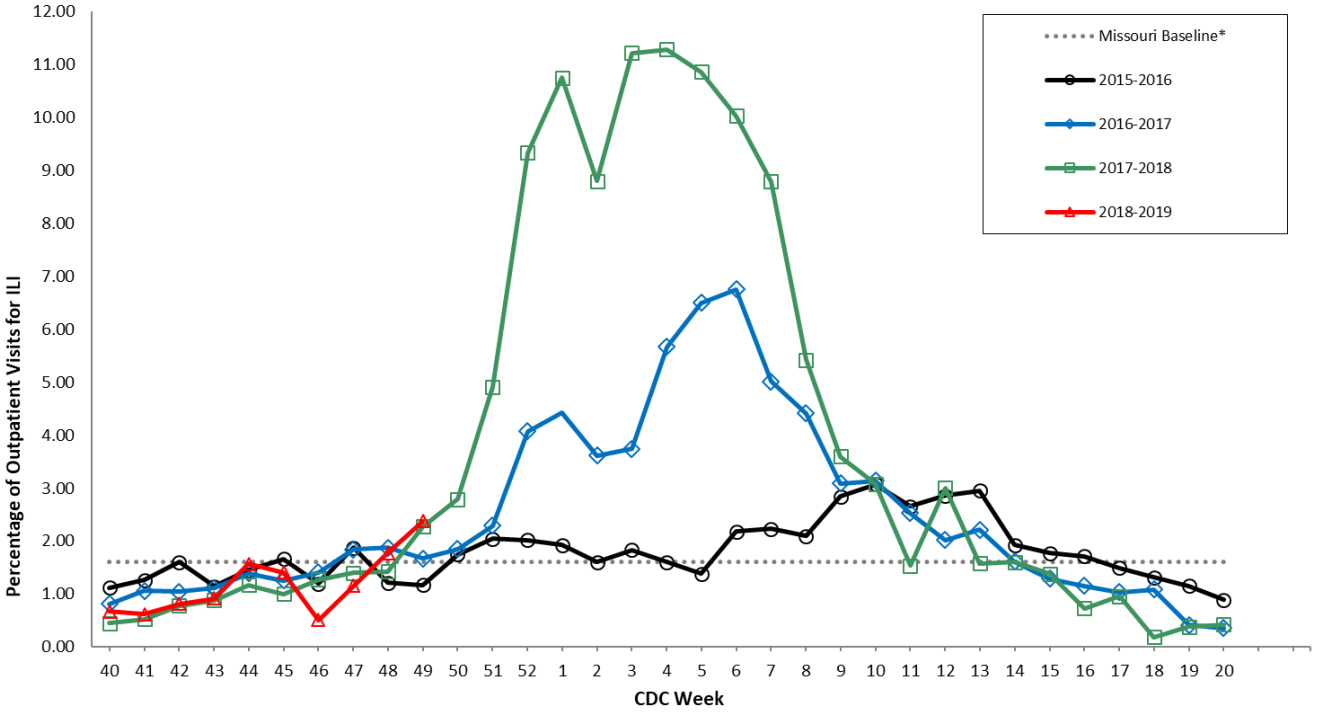
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

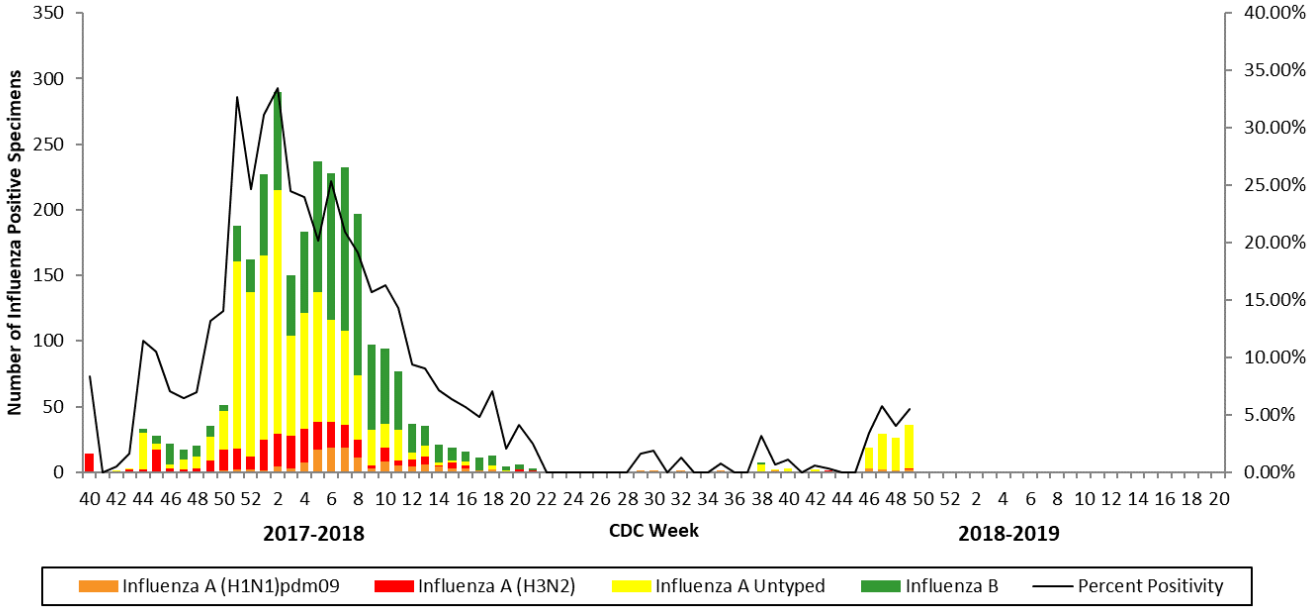
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

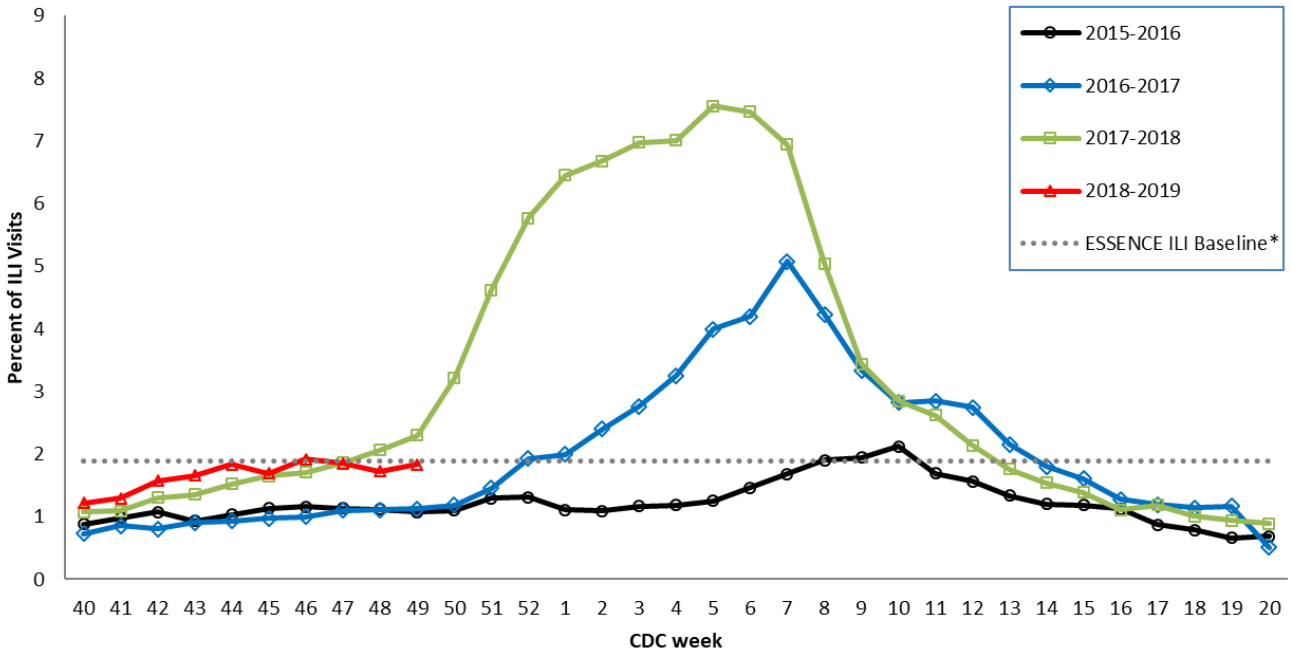
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

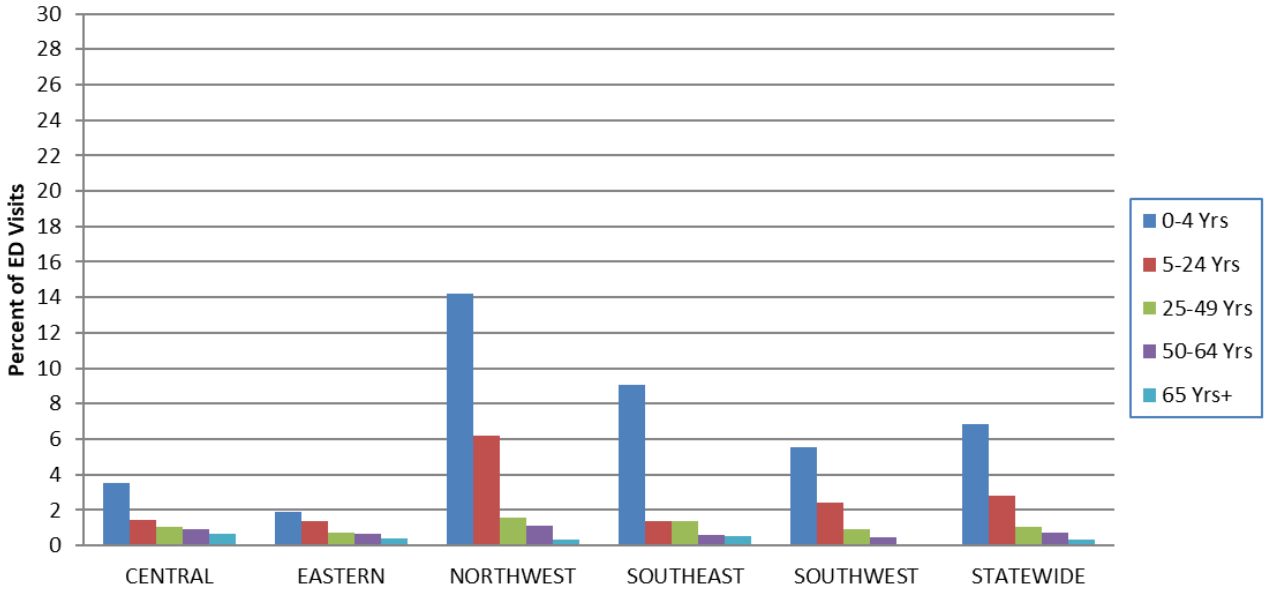
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

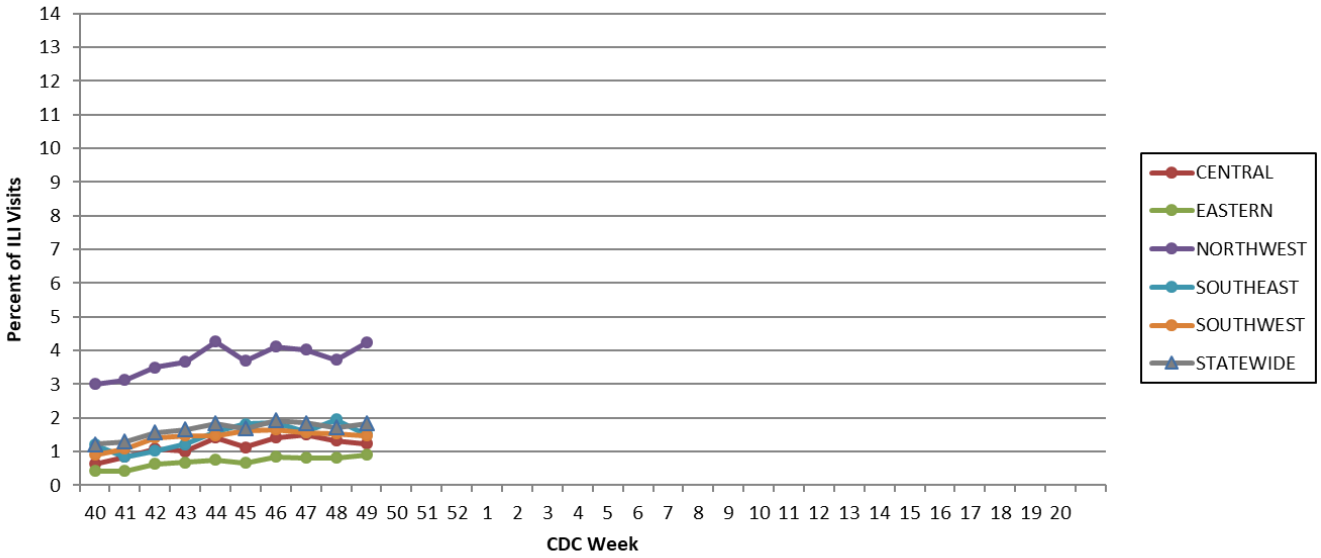
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 49, 2018*



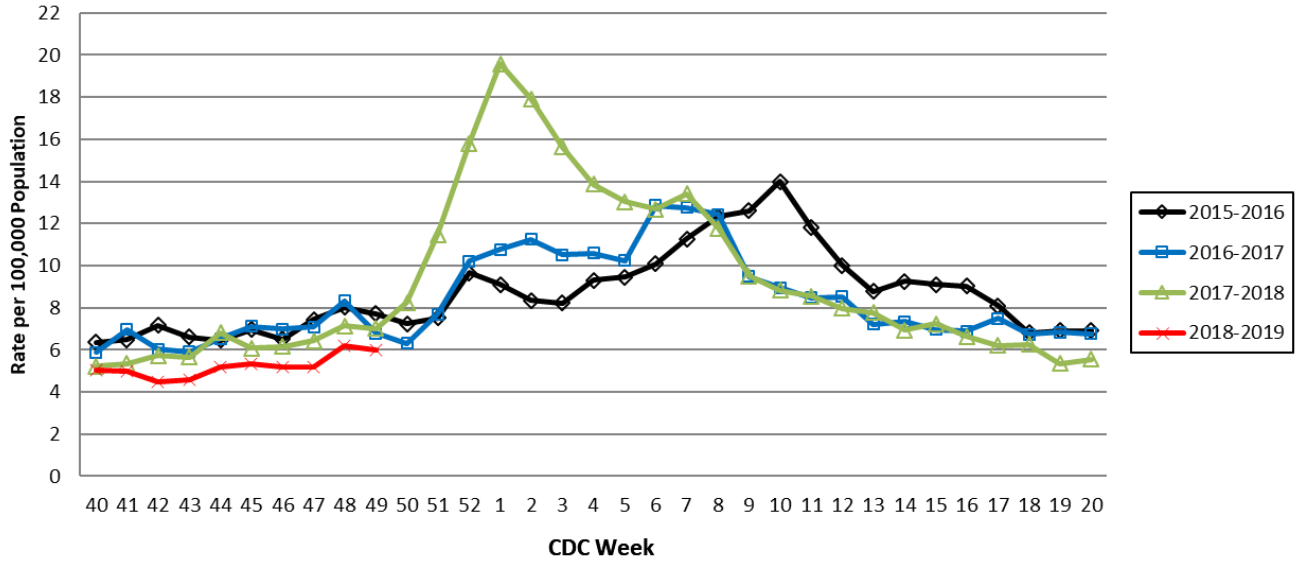
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



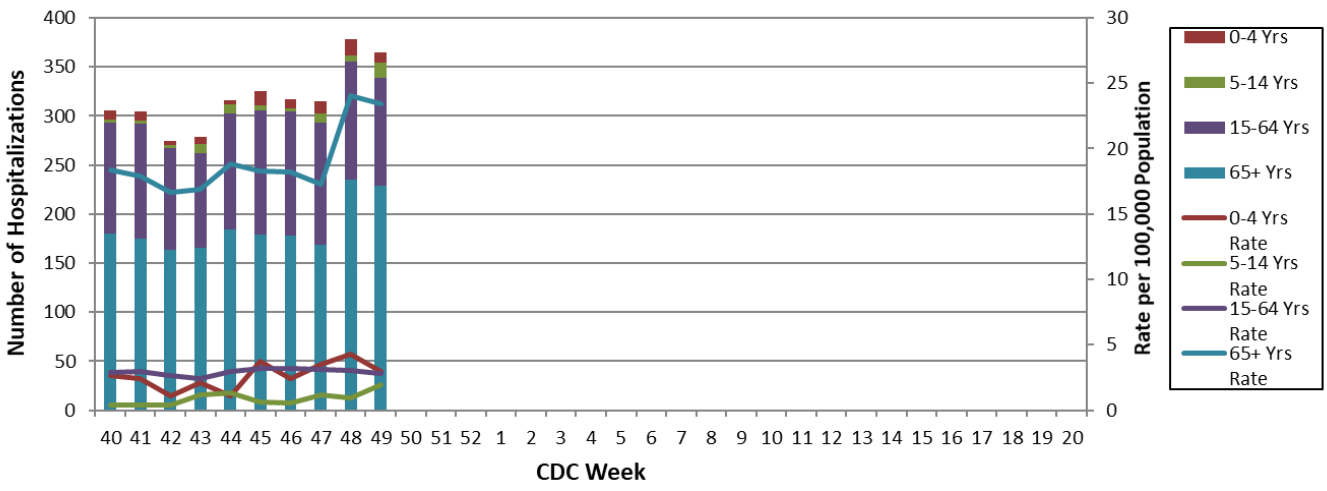
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 49, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 50: December 9 – December 15, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].

- During Week 50, a total of 459 laboratory-positive[3] influenza cases (392 influenza A, 62 influenza B, and five untyped) were reported. A season-to-date total of 2,569 laboratory-positive influenza cases have been reported in Missouri as of Week 50. The influenza type for reported season-to-date cases includes 67.7% influenza A, 31.2% influenza B and 1.1% untyped. There was one laboratory-positive case of influenza (influenza A, H1) reported by the Missouri State Public Health Laboratory (MSPHL) during Week 50. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 50 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.39 % (Figure 5) and 1.91% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Two influenza-associated deaths have been reported in Missouri as of Week 50.[5] During Week 49, 67 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 482 P&I associated deaths in Missouri.[6]

- One influenza outbreak has been reported in Missouri as of Week 50. No ILI-associated outbreaks or school closures have been reported.

- Influenza activity in the United States remained slightly elevated during Week 49. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 50**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 50**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 50 (December 9, 2018 – December 15, 2018)*

Influenza Type	Week 48	Week 49	Week 50	2018-2019* Season-to-Date
Influenza A	187	224	392	1,739
Influenza B	101	67	62	801
Influenza Unknown Or Untyped	4	6	5	29
Total	292	297	459	2,569

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 50 (December 9, 2018 – December 15, 2018)*‡

Age Group	Week 50 Cases	Week 50 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	102	27.25	487	130.09
05-24	207	12.90	925	57.65
25-49	71	3.71	618	32.30
50-64	42	3.40	301	24.35
65+	37	3.87	238	24.92
Total	459	7.54	2,569	42.23

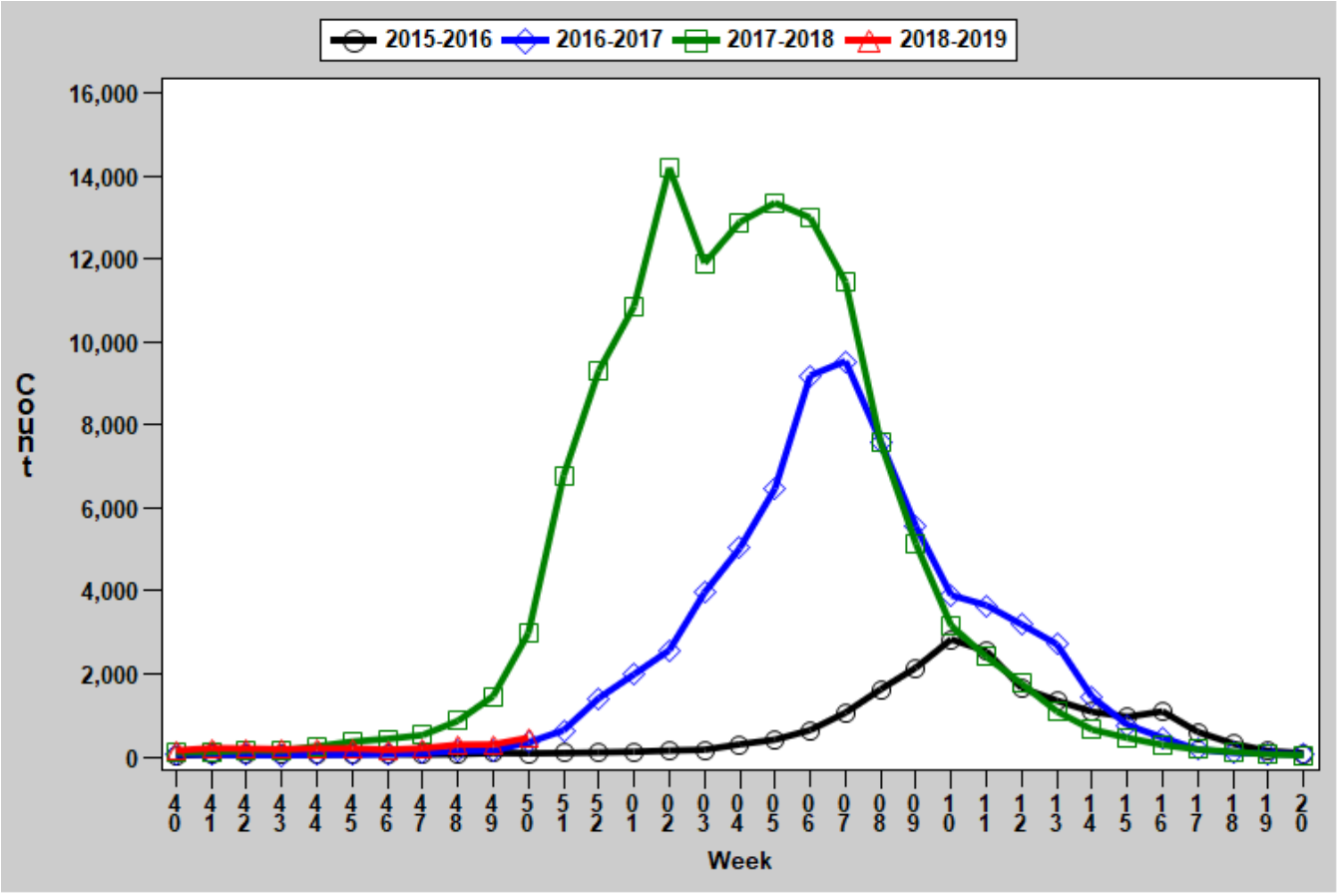
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 50 (December 9, 2018 – December 15, 2018)[*‡]

Region	Week 50 Cases	Week 50 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	49	7.24	271	40.03
Eastern	64	2.82	564	24.89
Northwest	286	17.90	792	49.58
Southeast	25	5.30	600	127.20
Southwest	35	3.27	342	31.92
Total	459	7.54	2,569	42.23

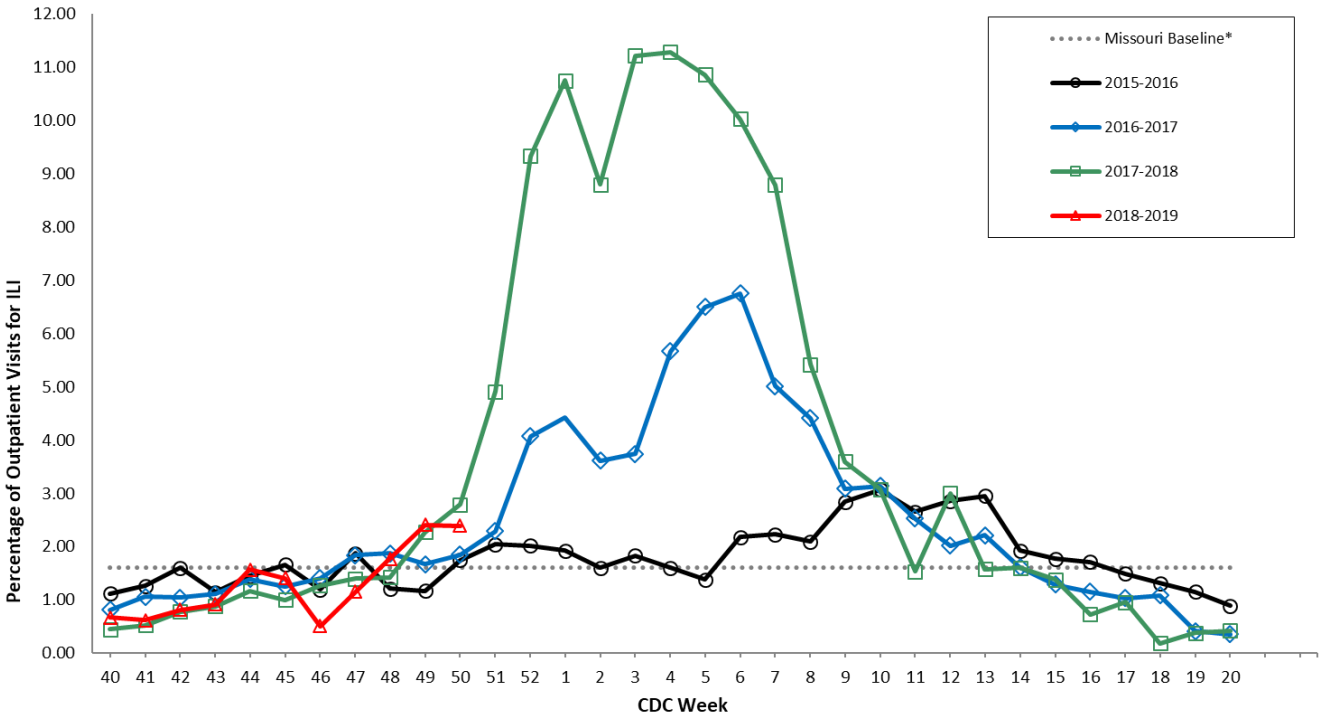
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

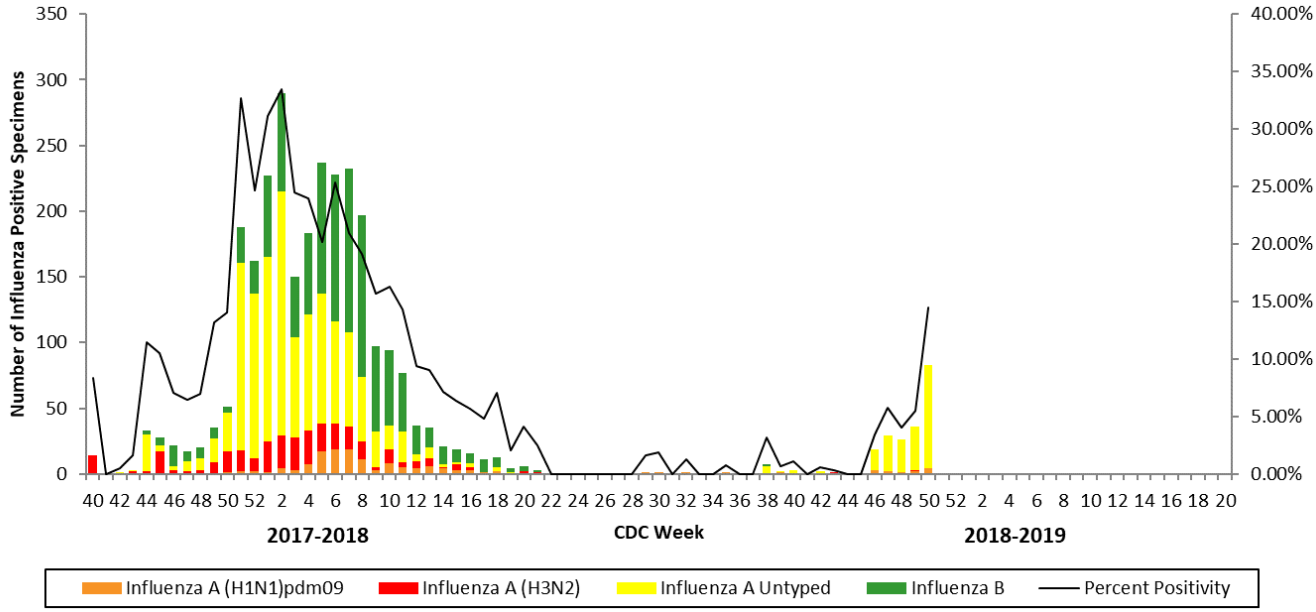
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

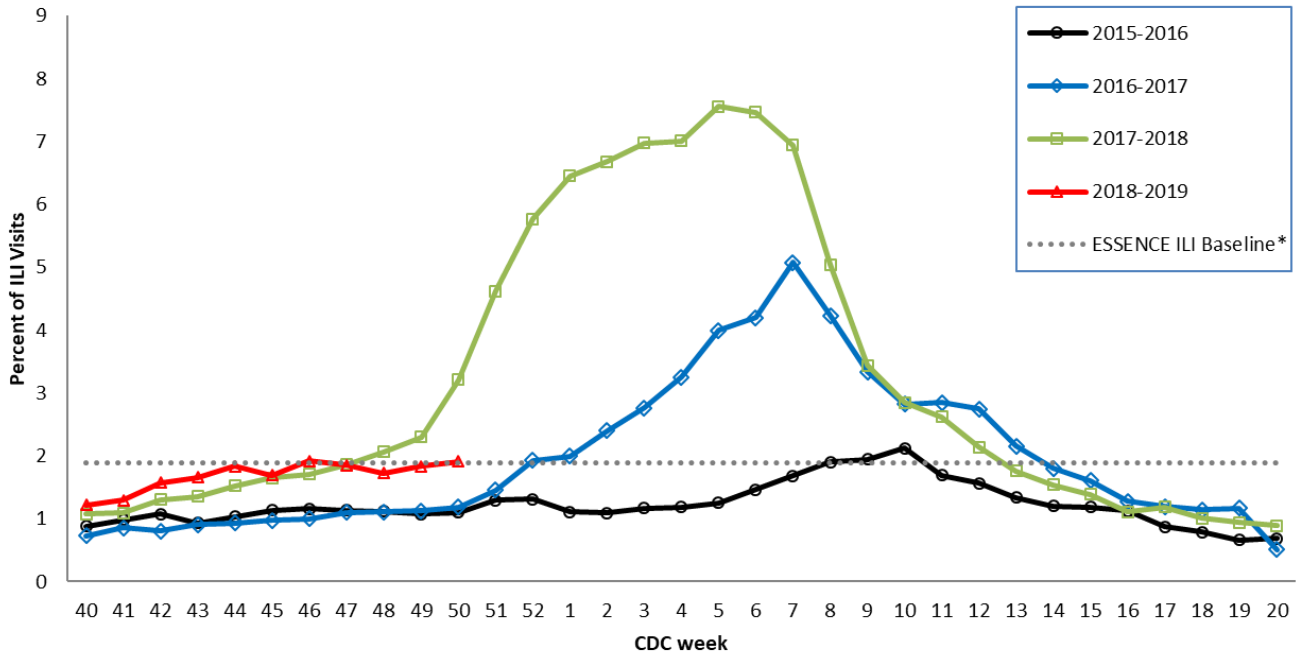
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

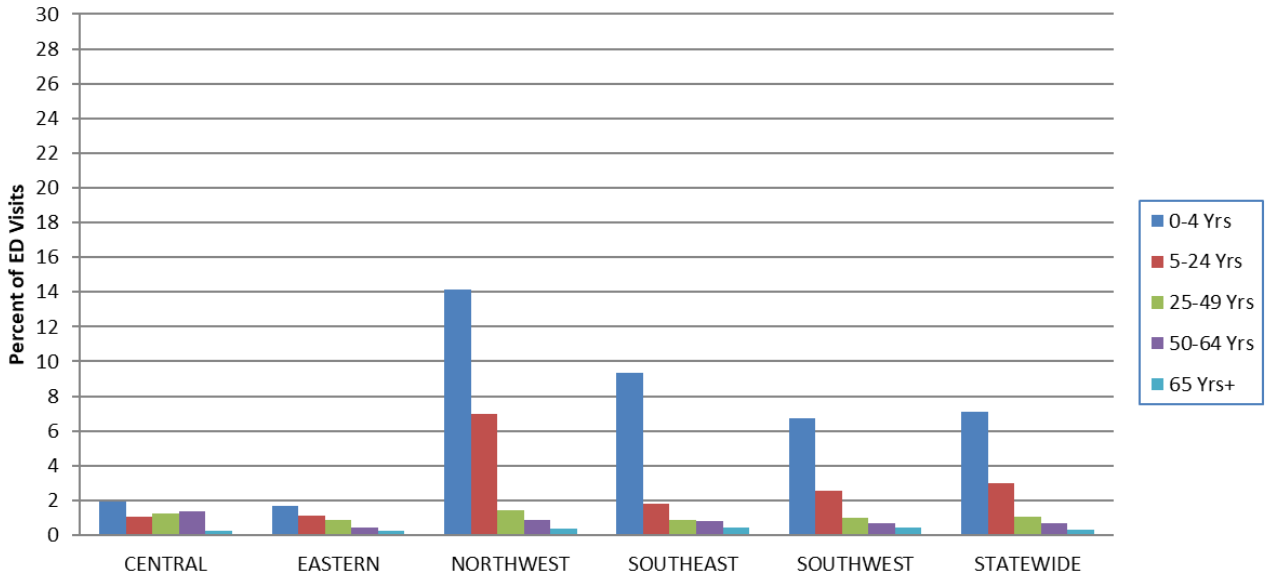
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

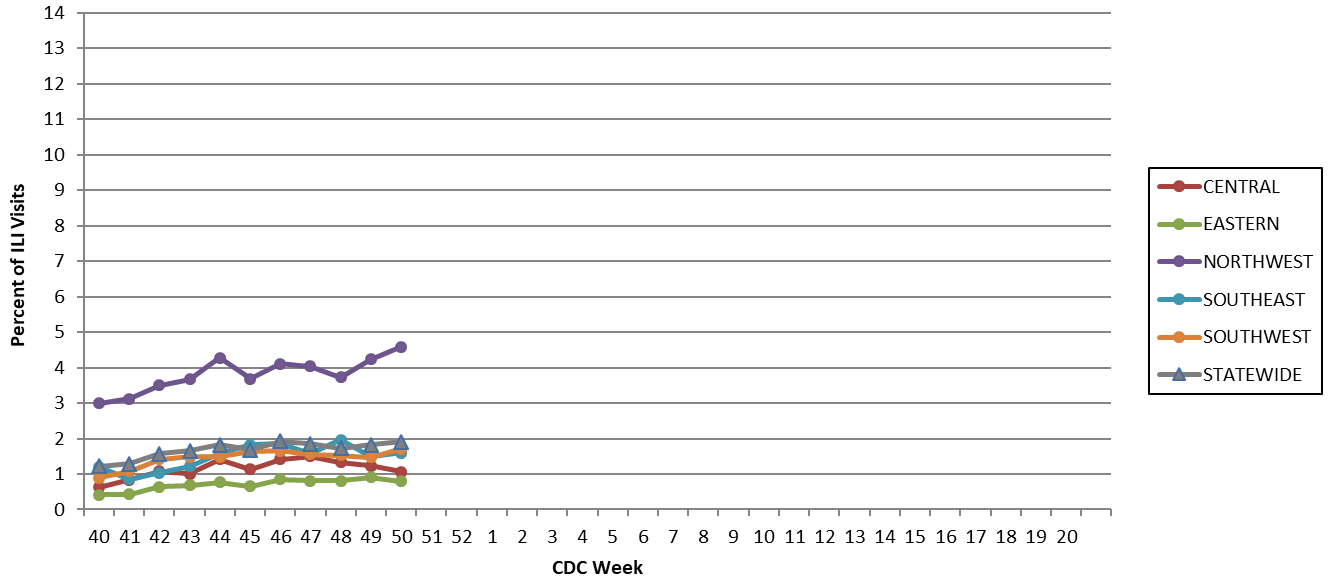
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 50, 2018*



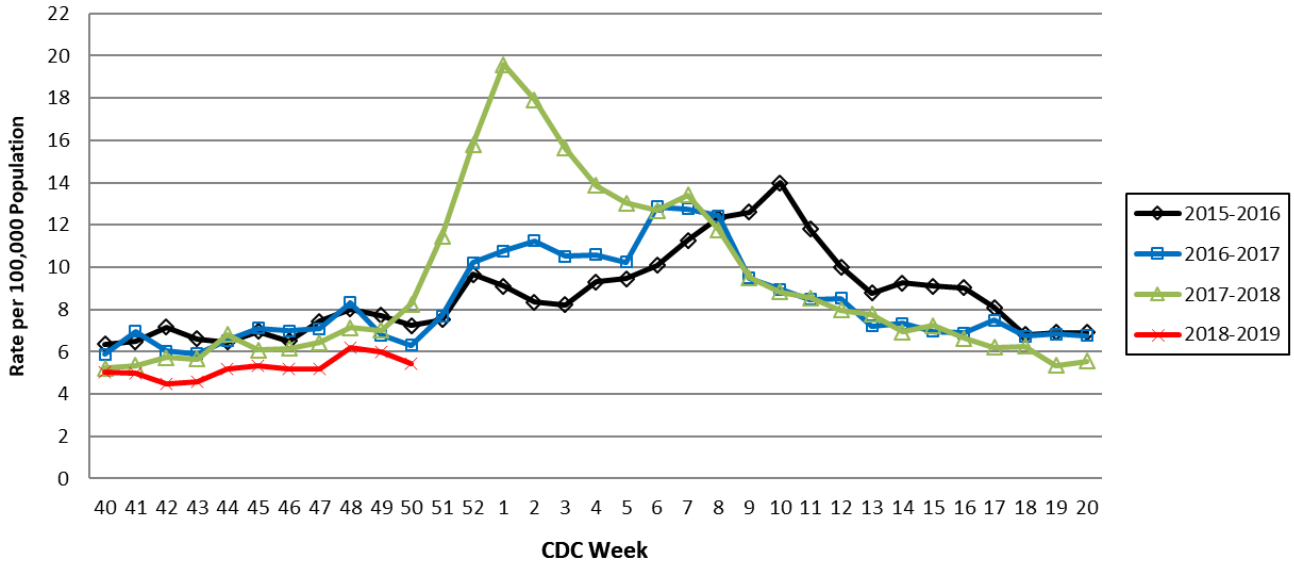
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



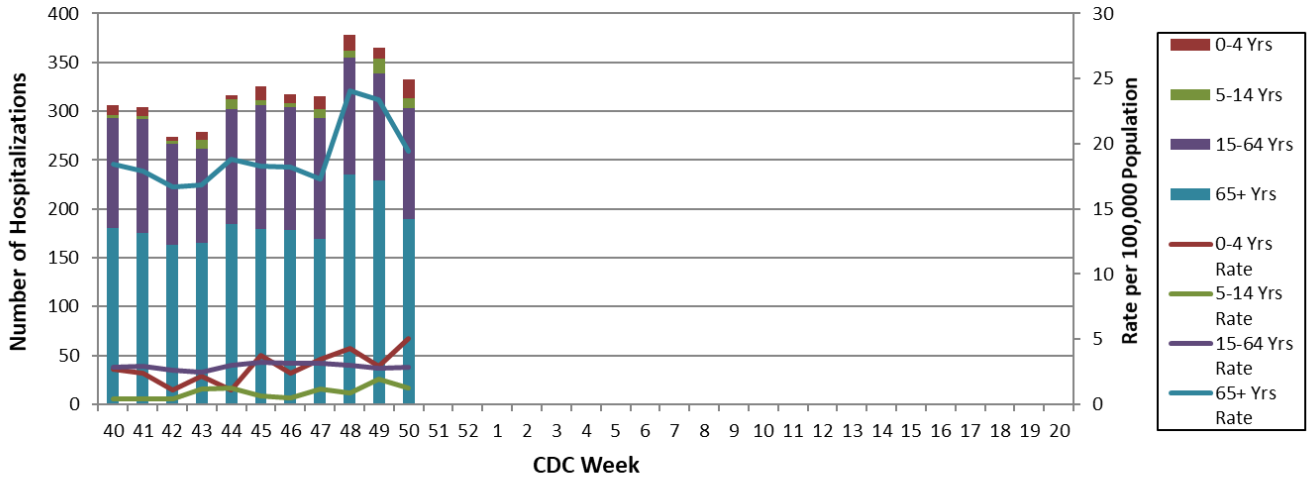
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 50, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 51: December 16 – December 22, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].

- During Week 51, a total of 338 laboratory-positive[3] influenza cases (306 influenza A, 30 influenza B, and two untyped) were reported. A season-to-date total of 3, 017 laboratory-positive influenza cases have been reported in Missouri as of Week 51. The influenza type for reported season-to-date cases includes 70.9% influenza A, 28.1% influenza B and 1.0% untyped. There were two laboratory-positive case of influenza A (1 H1N1 and 1 H3) reported by the Missouri State Public Health Laboratory (MSPHL) during Week 51. The percentage of respiratory specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 51 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.12 % (Figure 5) and 2.33% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- Two influenza-associated deaths have been reported in Missouri as of Week 50.[5] During Week 50, 61 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 543 P&I associated deaths in Missouri.[6]

- One influenza outbreak has been reported in Missouri as of Week 51. No ILI-associated outbreaks or school closures have been reported.

- Influenza activity in the United States increased during Week 50. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 51**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 51**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 51 (December 16, 2018 – December 22, 2018)*

Influenza Type	Week 49	Week 50	Week 51	2018-2019* Season-to-Date
Influenza A	228	480	306	2, 140
Influenza B	68	75	30	846
Influenza Unknown Or Untyped	6	5	2	31
Total	302	560	338	3, 017

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 51 (December 16, 2018 – December 22, 2018)*‡

Age Group	Week 51 Cases	Week 51 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	82	21.90	599	160.01
05-24	149	9.29	1,109	69.12
25-49	61	3.19	708	37.00
50-64	29	2.35	341	27.58
65+	17	1.78	260	27.23
Total	338	5.56	3,017	49.59

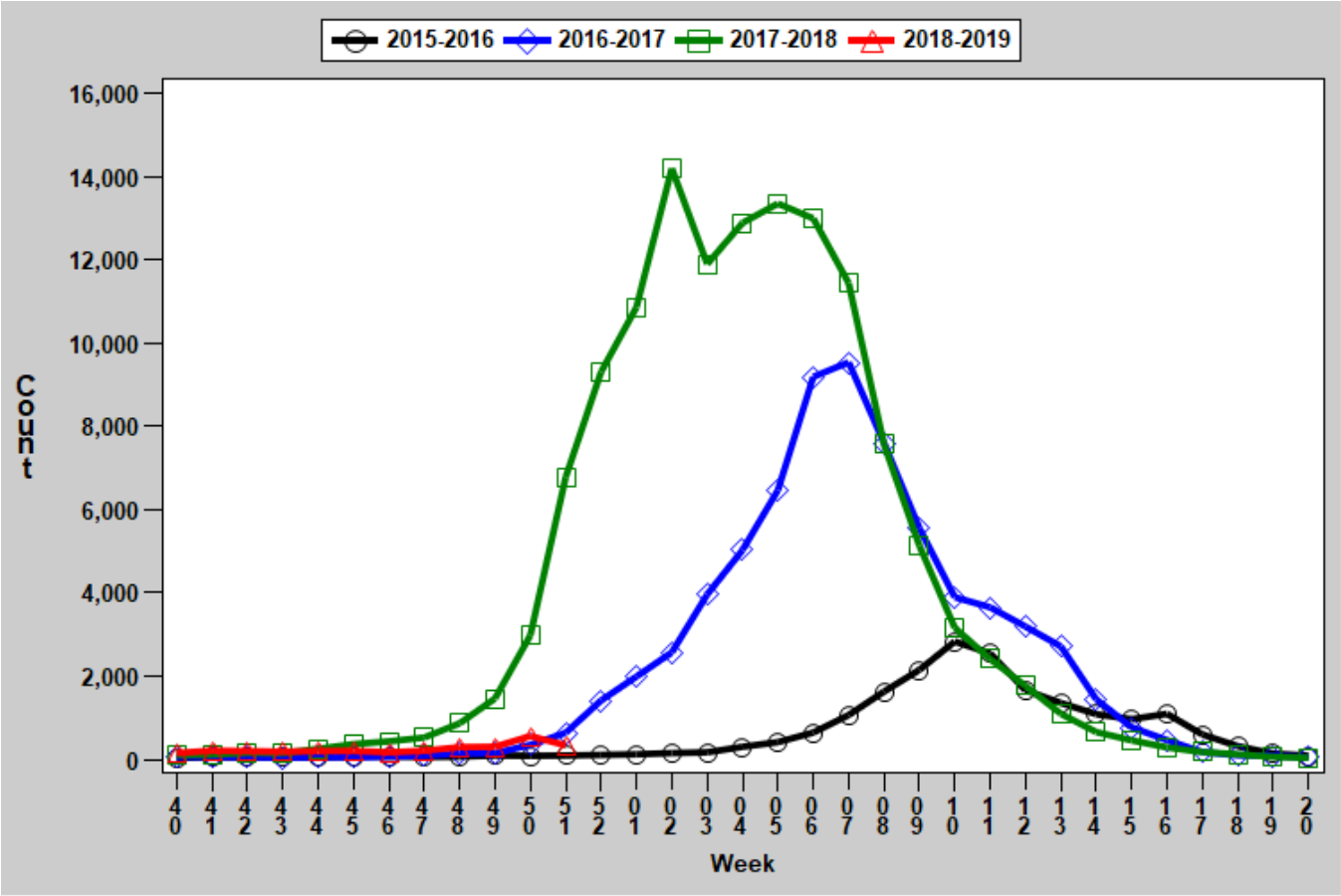
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 51 (December 16, 2018 – December 22, 2018)[*‡]

Region	Week 51 Cases	Week 51 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	25	3.69	331	48.89
Eastern	122	5.38	700	30.89
Northwest	170	10.64	1,005	62.91
Southeast	6	1.27	613	129.96
Southwest	15	1.40	368	34.35
Total	338	5.56	3,017	49.59

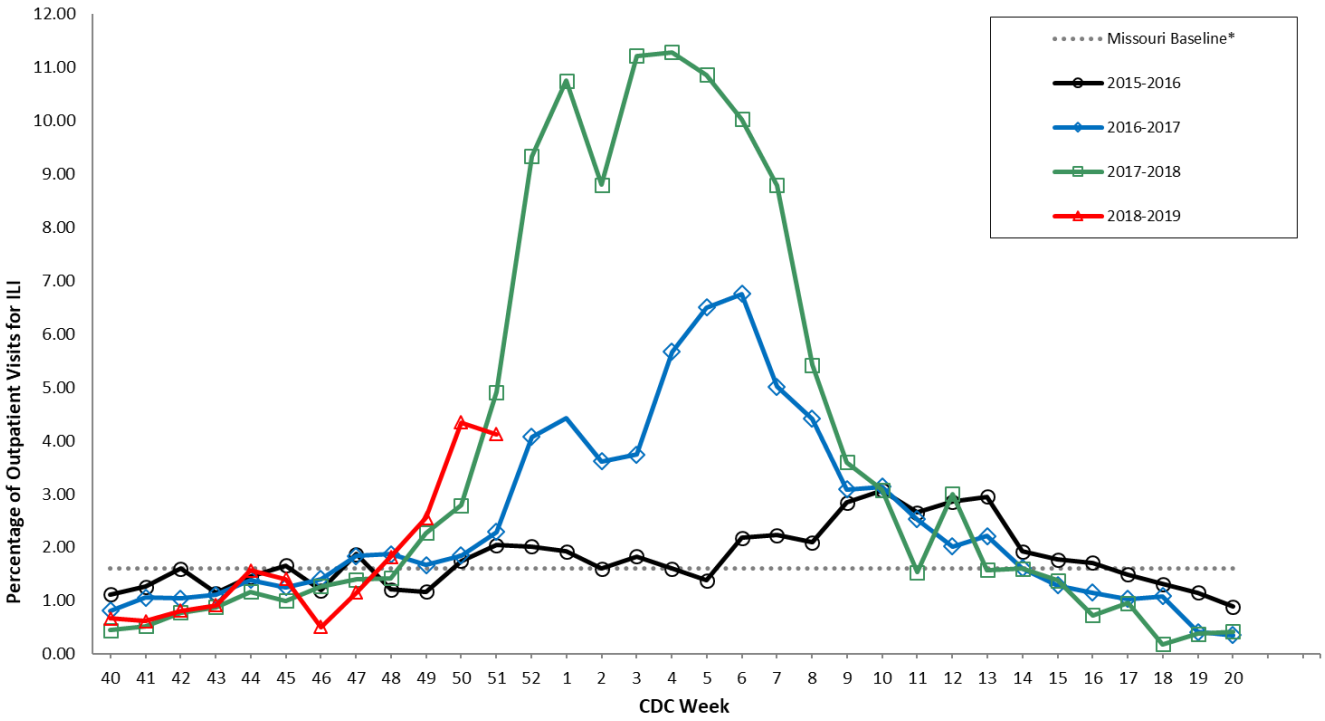
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

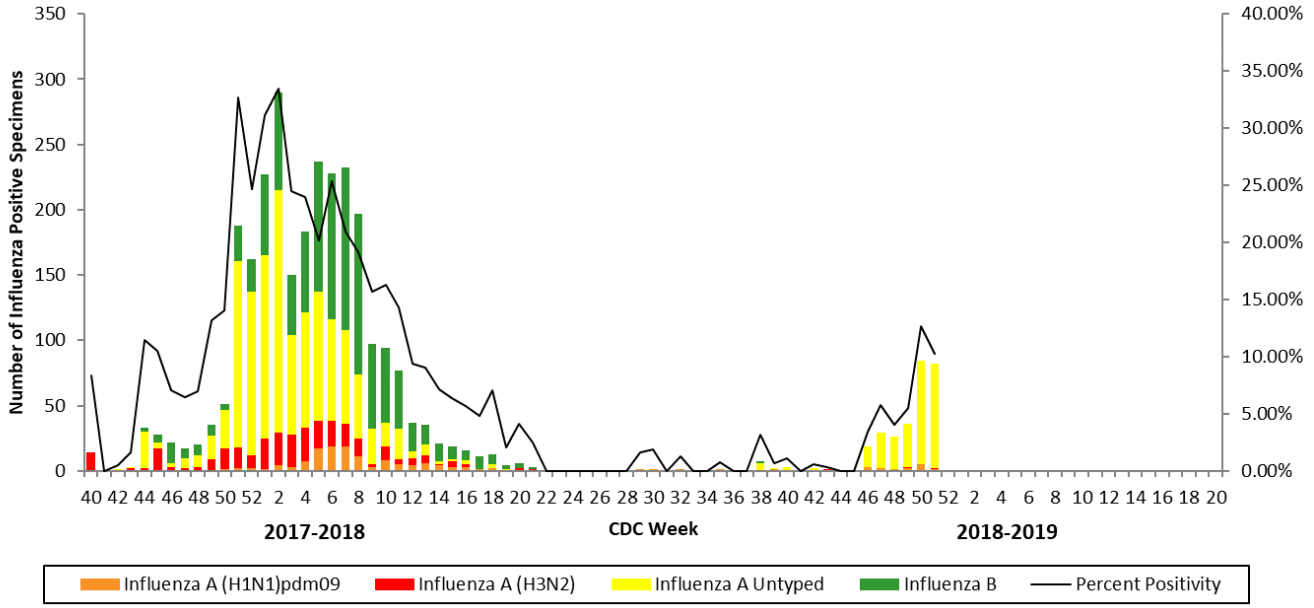
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

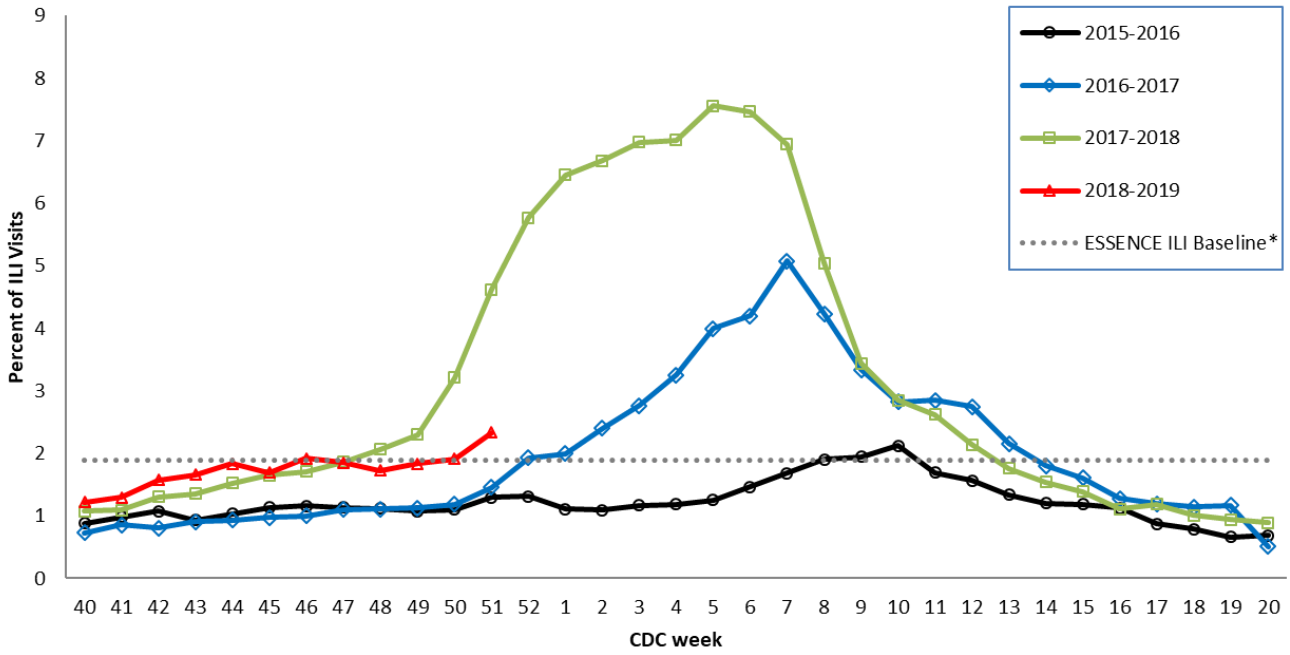
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

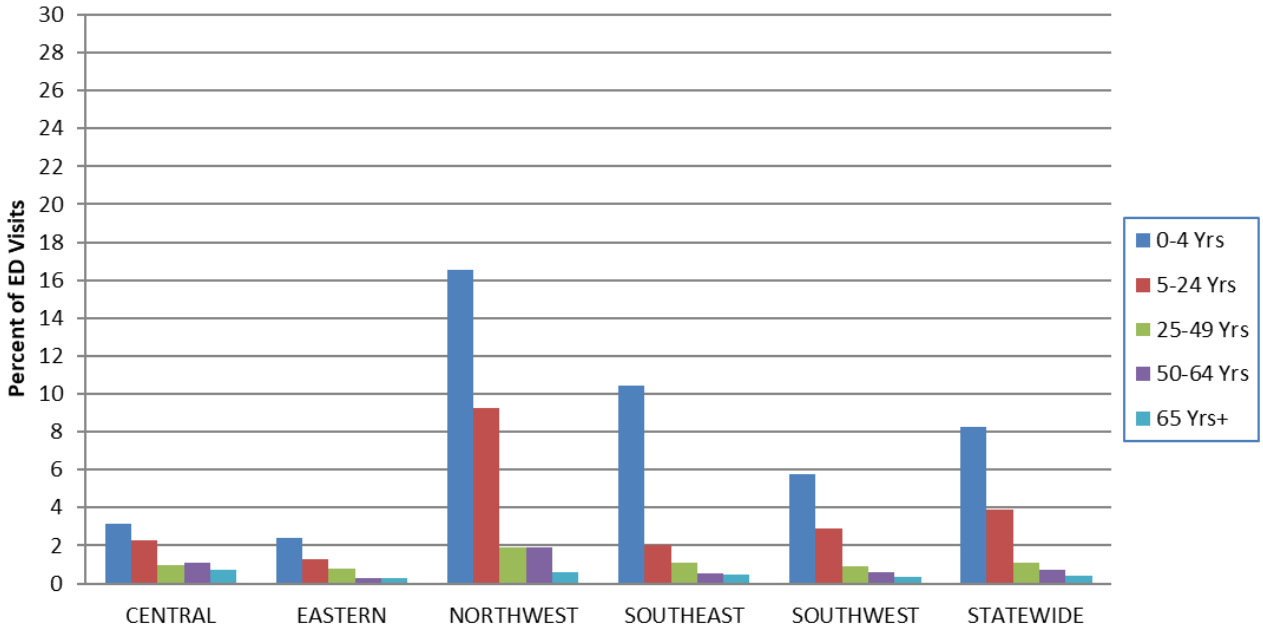
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

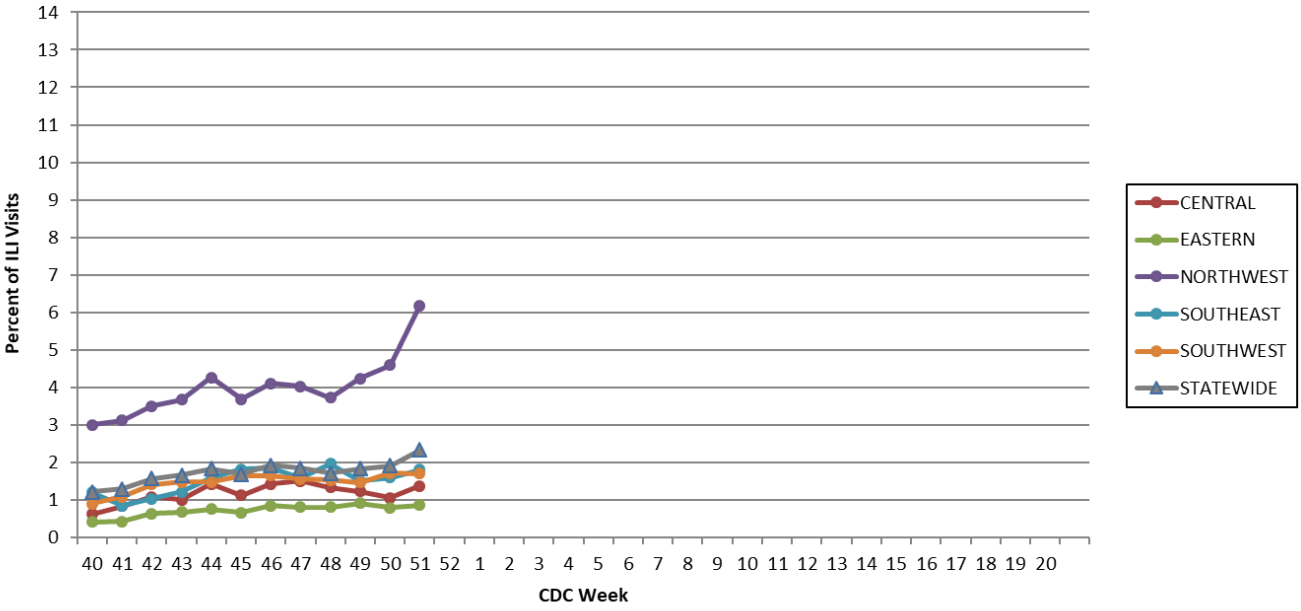
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 51, 2018*



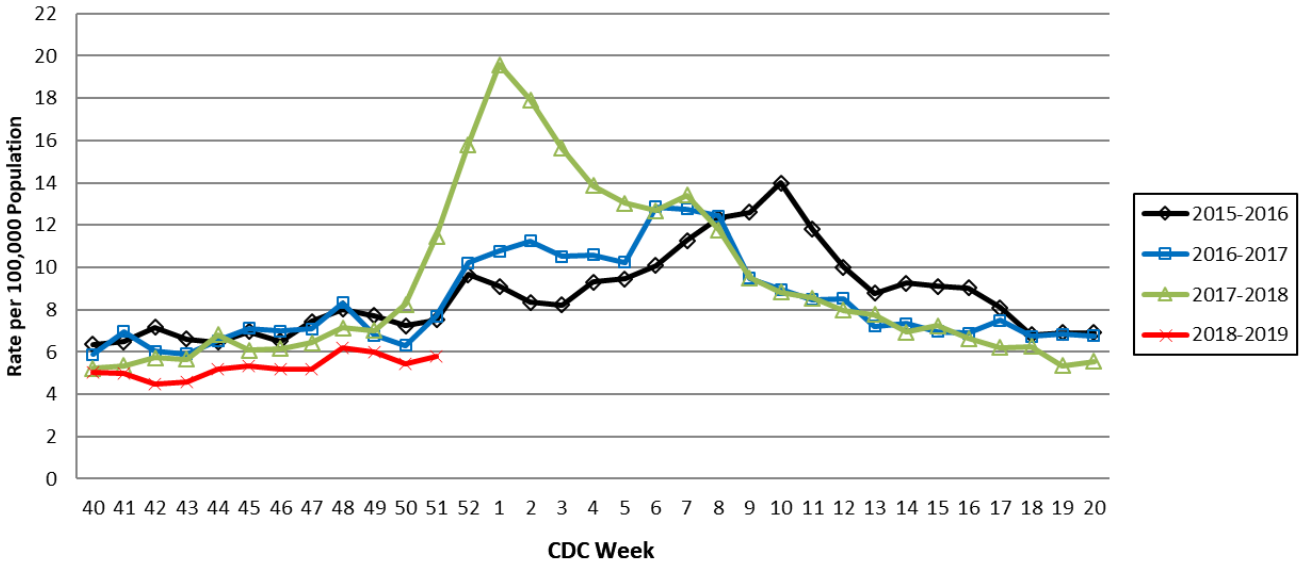
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



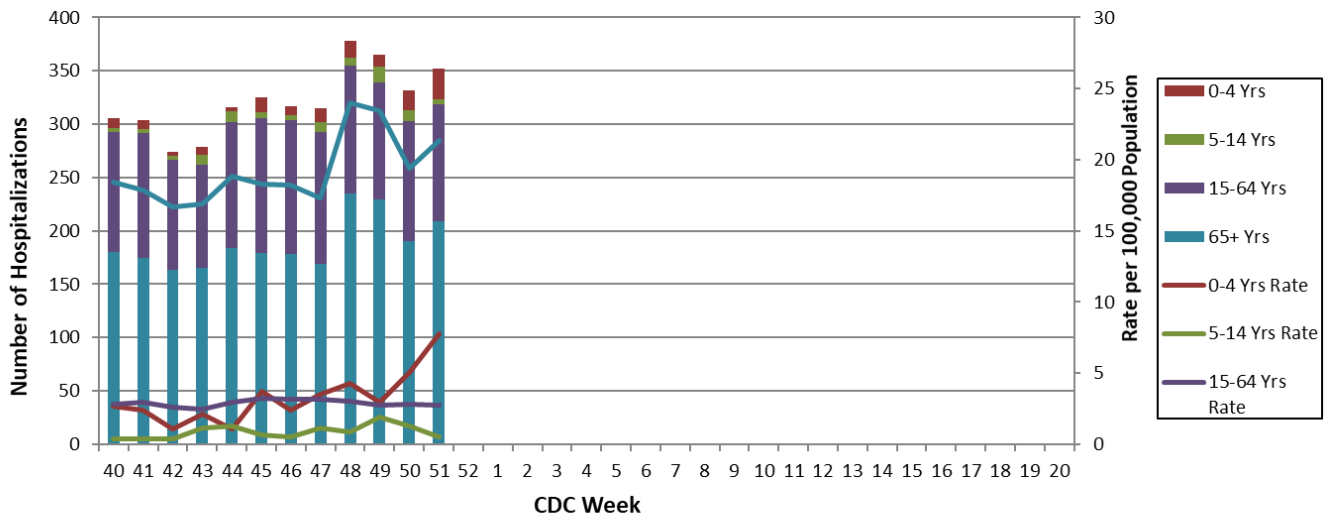
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 51, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 52: December 23 – December 29, 2018

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- During Week 52, a total of 653 laboratory-positive[3] influenza cases (609 influenza A, 40 influenza B, and four untyped) were reported. A season-to-date total of 4,122 laboratory-positive influenza cases have been reported in Missouri as of Week 52. The influenza type for reported season-to-date cases includes 76.5% influenza A, 22.5% influenza B and 1.0% untyped. There were two laboratory-positive cases of influenza A, including one H1N1 and one H3, reported by the Missouri State Public Health Laboratory (MSPHL) during Week 52. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 52 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.86 % (Figure 5) and 2.84% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of two influenza-associated deaths have been reported in Missouri as of Week 52.[5] During Week 51, 17 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 560 P&I associated deaths in Missouri.[6]

- A season-to-date total of one influenza outbreak has been reported in Missouri as of Week 52. No ILI-associated outbreaks or school closures have been reported.

- Influenza activity increased in the United States during Week 51. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 52**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 52**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 52 (December 23, 2018 – December 29, 2018)*

Influenza Type	Week 50	Week 51	Week 52	2018-2019* Season-to-Date
Influenza A	493	689	609	3,154
Influenza B	78	62	40	930
Influenza Unknown Or Untyped	6	4	4	38
Total	577	755	653	4,122

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 52 (December 23, 2018 – December 29, 2018)*‡

Age Group	Week 52 Cases	Week 52 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	162	43.27	870	232.40
05-24	179	11.16	1,469	91.55
25-49	175	9.15	960	50.17
50-64	79	6.39	475	38.42
65+	58	6.07	348	36.44
Total	653	10.73	4,122	67.76

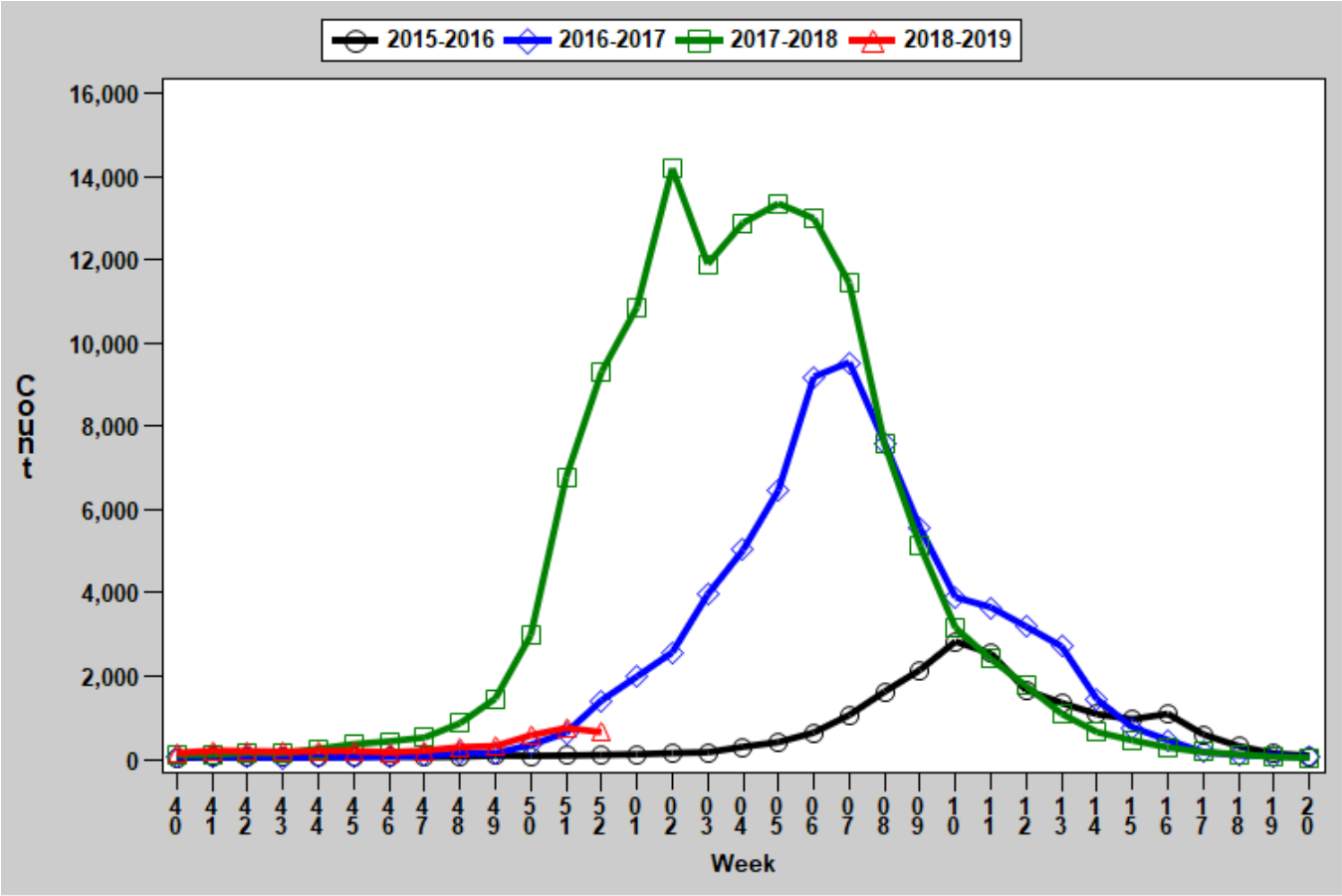
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 52 (December 23, 2018 – December 29, 2018)[*‡]

Region	Week 52 Cases	Week 52 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	41	6.06	433	63.96
Eastern	182	8.03	934	41.22
Northwest	342	21.41	1,612	100.91
Southeast	6	1.27	626	132.71
Southwest	82	7.65	517	48.26
Total	653	10.73	4,122	67.76

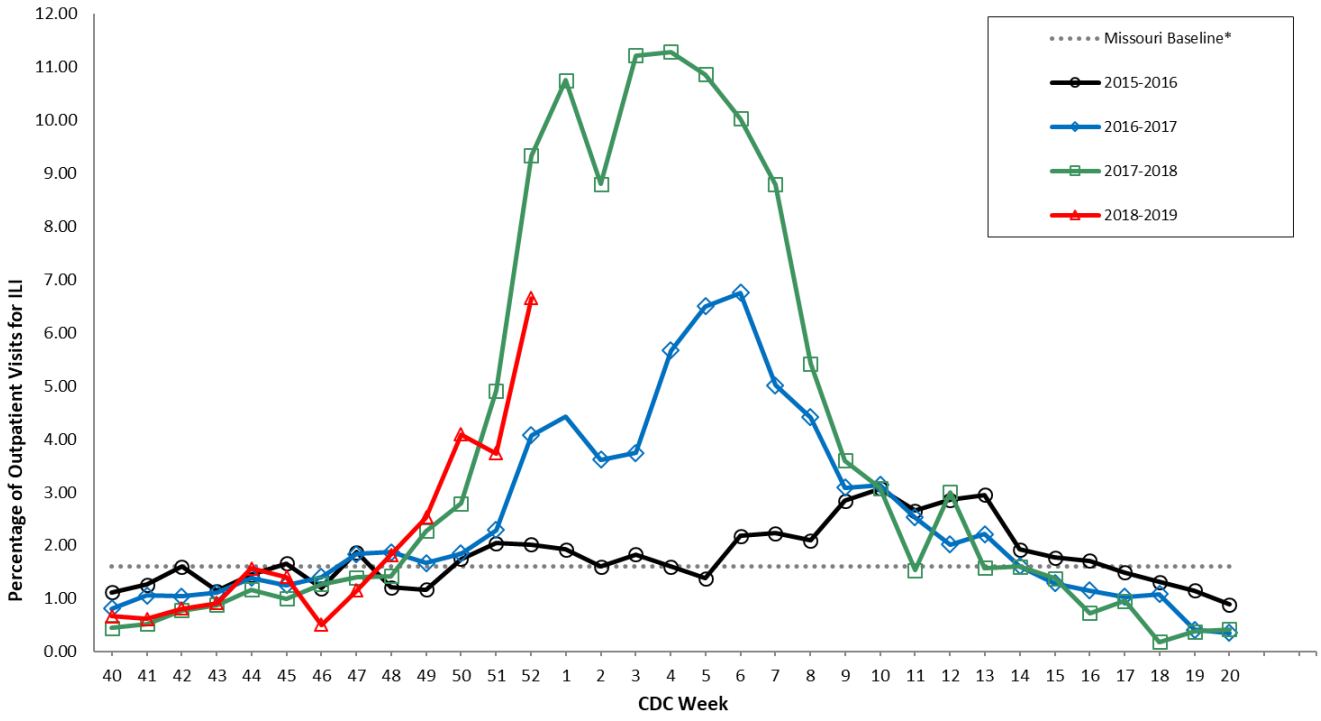
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

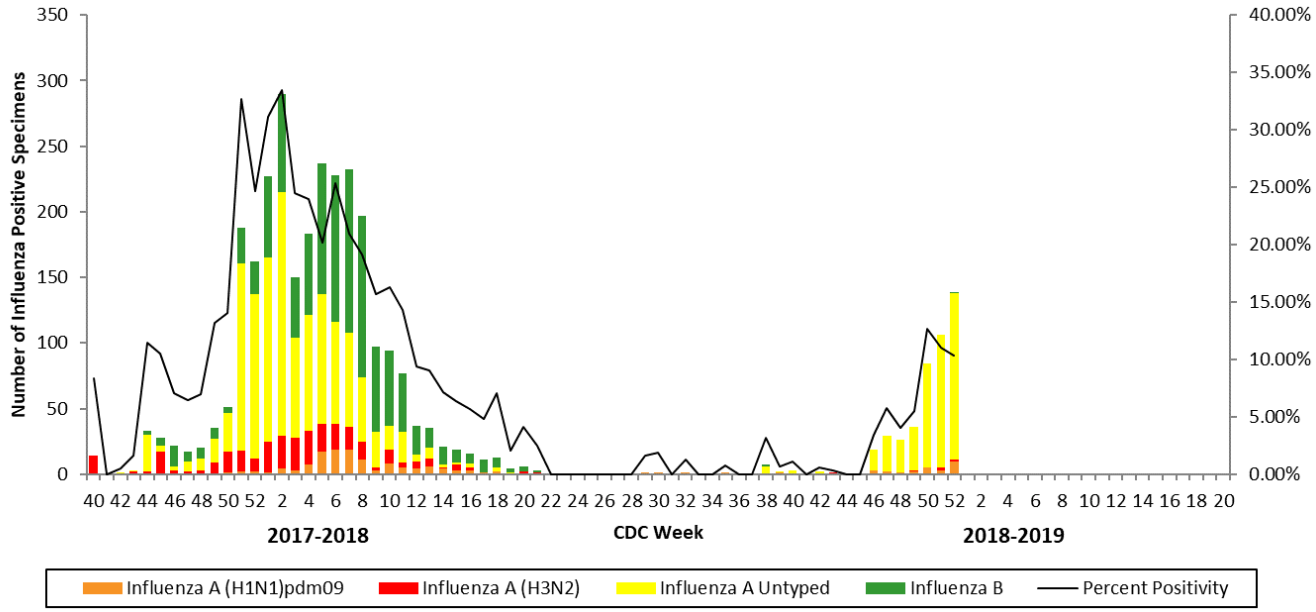
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

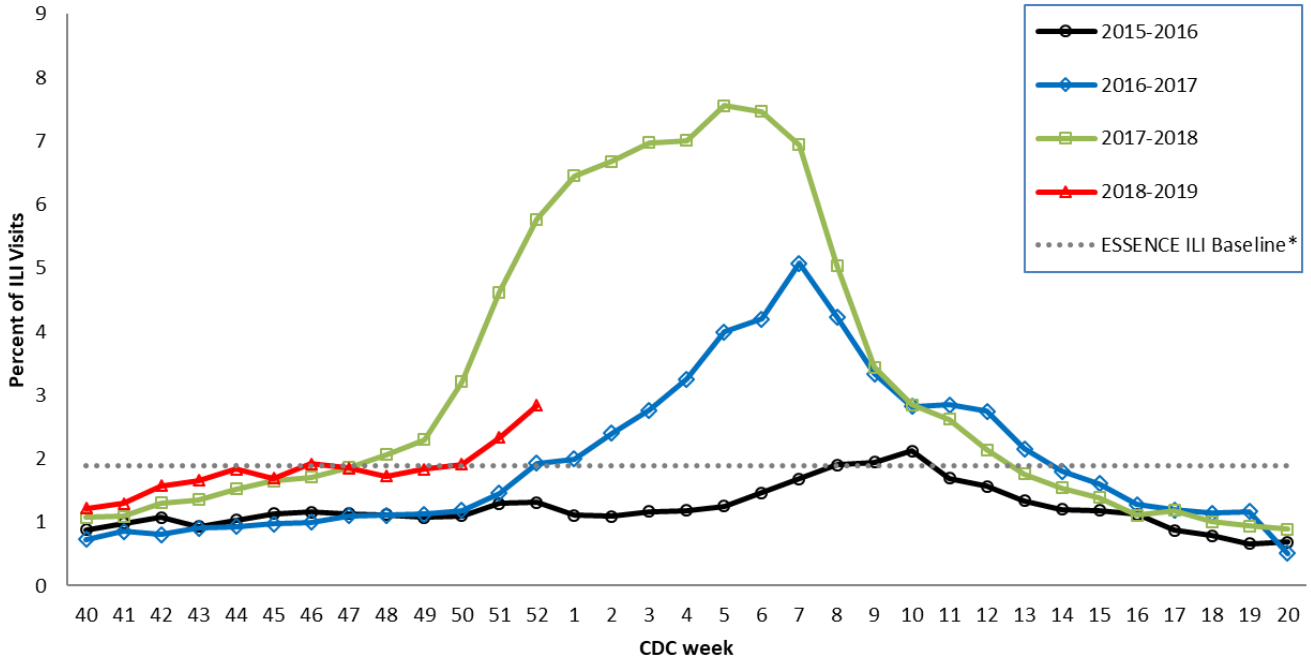
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

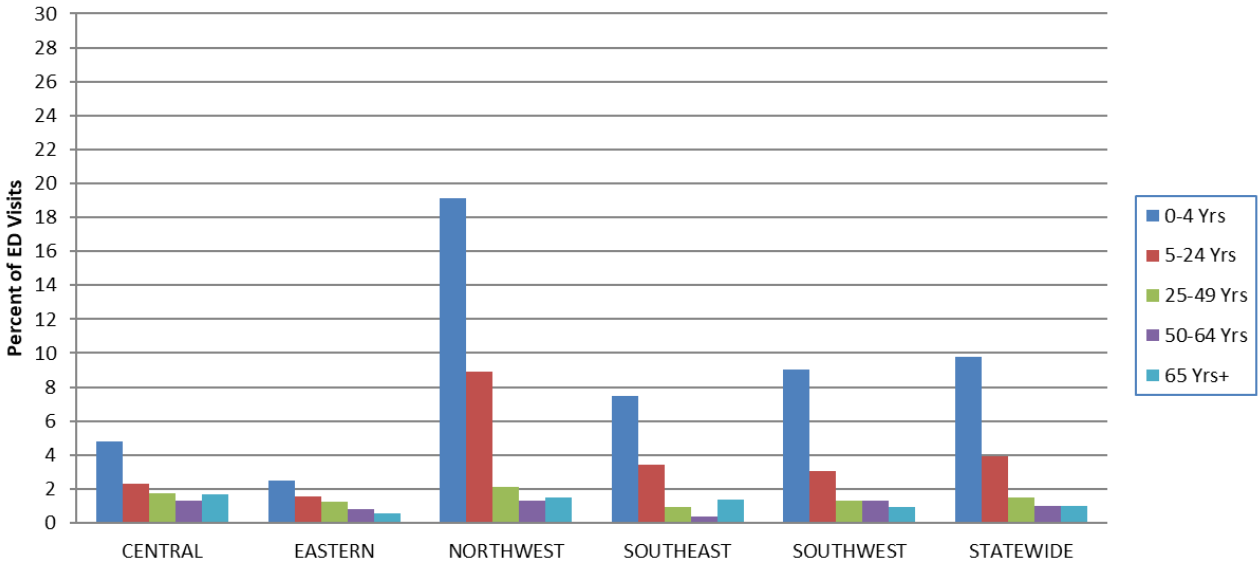
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

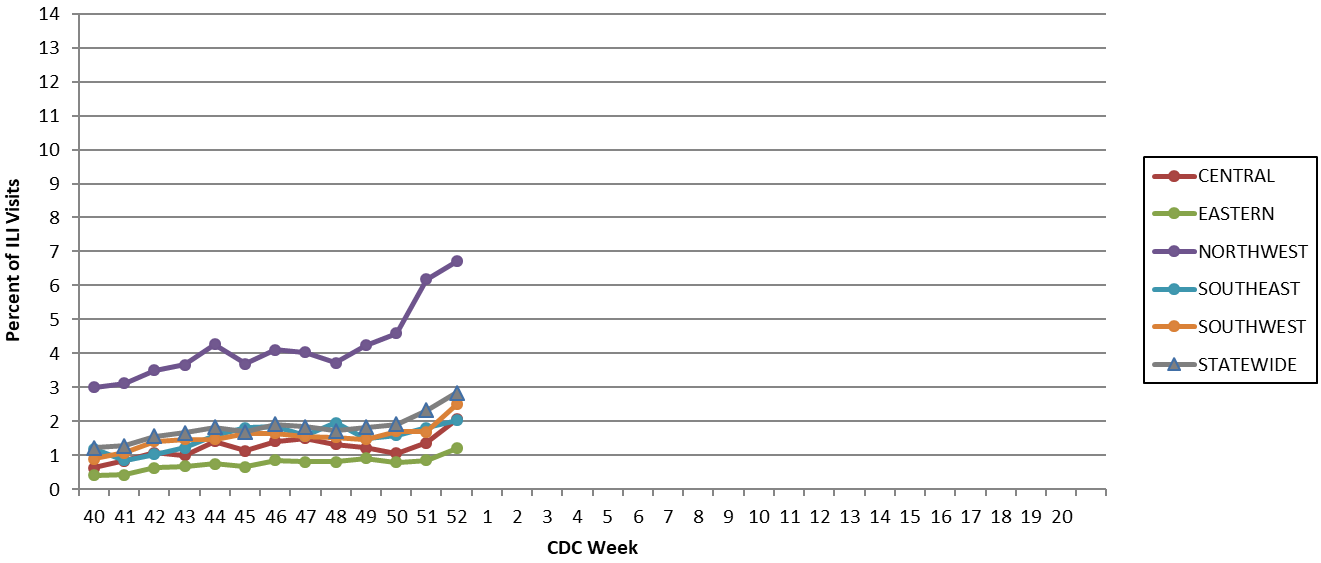
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 52, 2018*



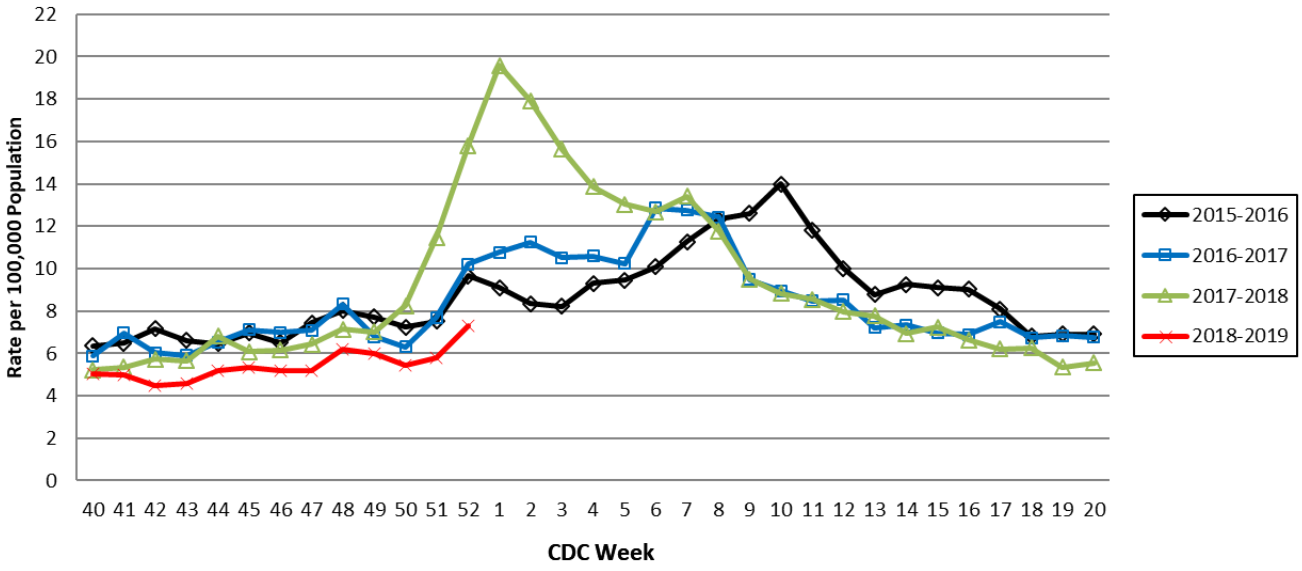
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



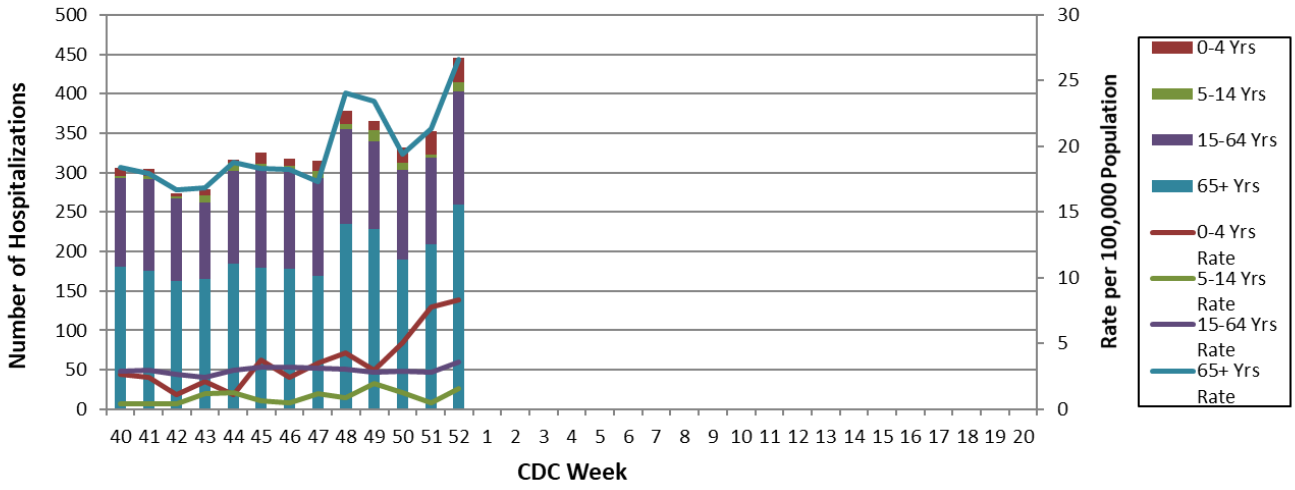
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 52, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 1: December 30, 2018 – January 5, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].
- During Week 1, a total of 841 laboratory-positive[3] influenza cases (747 influenza A, 89 influenza B, and five untyped) were reported. A season-to-date total of 5,460 laboratory-positive influenza cases have been reported in Missouri as of Week 1. The influenza type for reported season-to-date cases includes 78.9% influenza A, 20.2% influenza B and 0.9% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 1. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 1 (Figure 6).
- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 3.98 % (Figure 5) and 2.74% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.
- A season-to-date total of three influenza-associated deaths have been reported in Missouri as of Week 1.[5] During Week 52, 31 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 591 P&I associated deaths in Missouri.[6]
- A season-to-date total of one influenza outbreak has been reported in Missouri as of Week 1. No ILI-associated outbreaks or school closures have been reported.
- Influenza activity in the United States increased during Week 52. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 1**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 1**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 1 (December 30, 2018 – January 5, 2019)*

Influenza Type	Week 51	Week 52	Week 1	2018-2019* Season-to-Date
Influenza A	771	892	747	4,308
Influenza B	100	65	89	1,102
Influenza Unknown Or Untyped	5	10	5	50
Total	876	967	841	5,460

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 1 (December 30, 2018 – January 5, 2019)*‡

Age Group	Week 1 Cases	Week 1 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	189	50.49	1,150	307.19
05-24	213	13.28	1,850	115.30
25-49	209	10.92	1,288	67.31
50-64	140	11.32	687	55.57
65+	90	9.42	485	50.79
Total	841	13.82	5,460	89.75

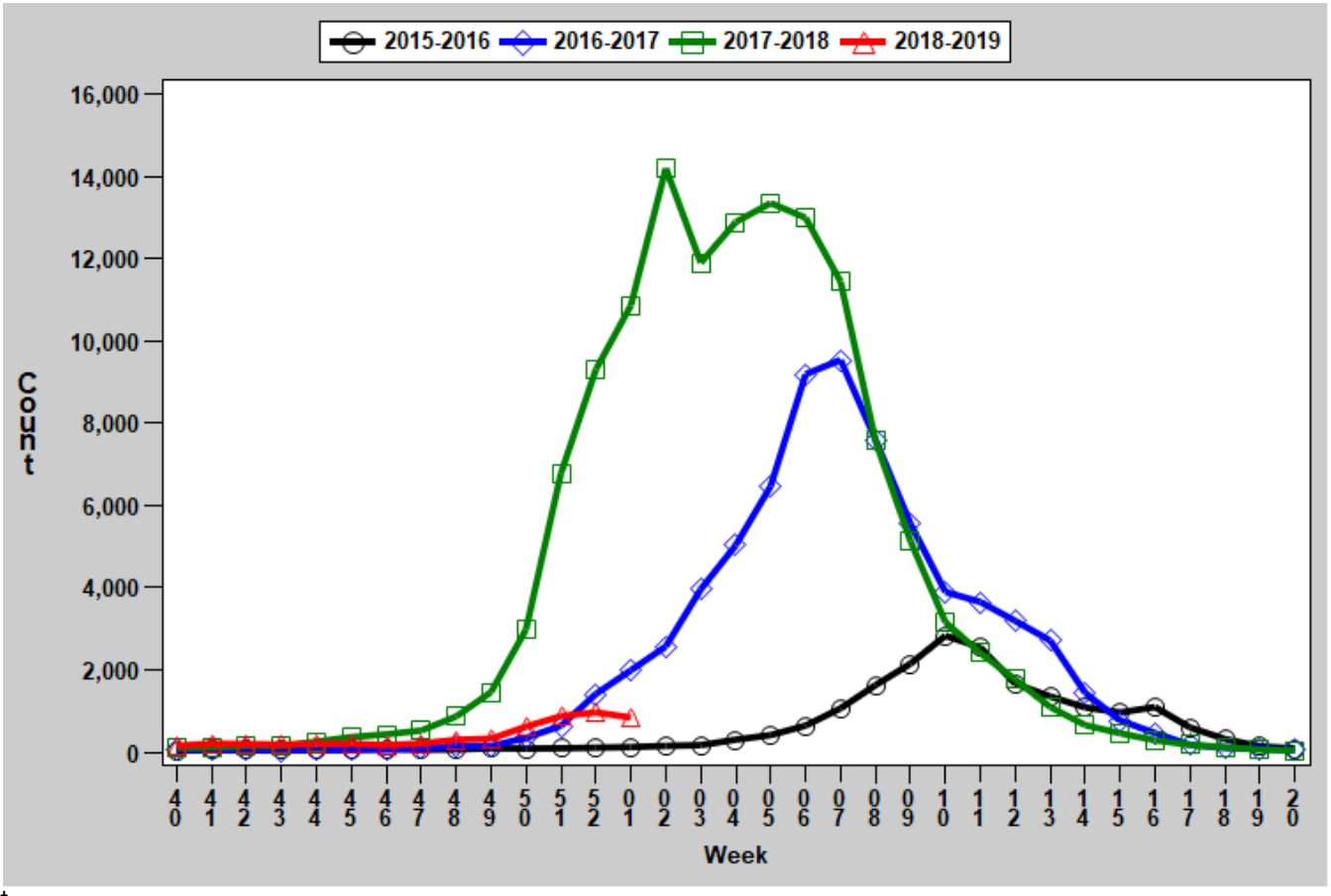
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 1 (December 30, 2018 – January 5, 2019)[*‡]

Region	Week 1 Cases	Week 1 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	45	6.65	520	76.81
Eastern	290	12.80	1,430	63.10
Northwest	317	19.84	2,045	128.01
Southeast	26	5.51	672	142.46
Southwest	163	15.22	793	74.02
Total	841	13.82	5,460	89.75

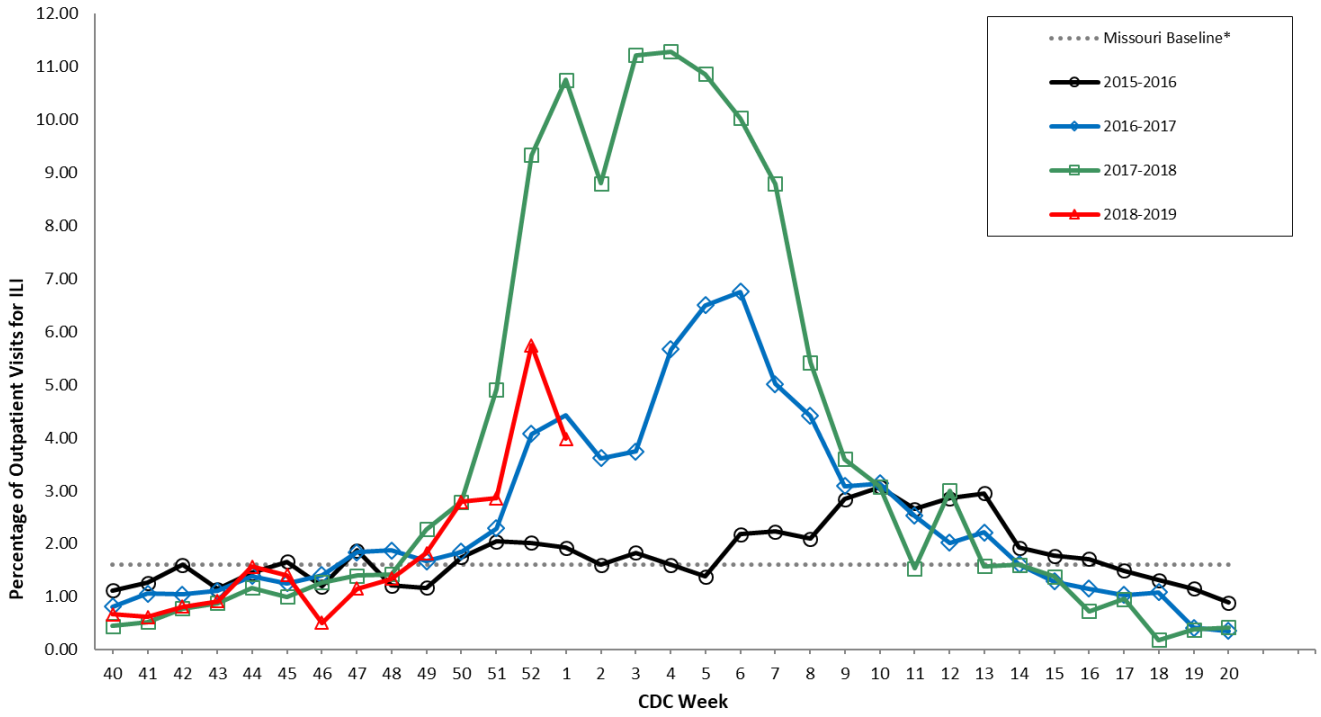
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

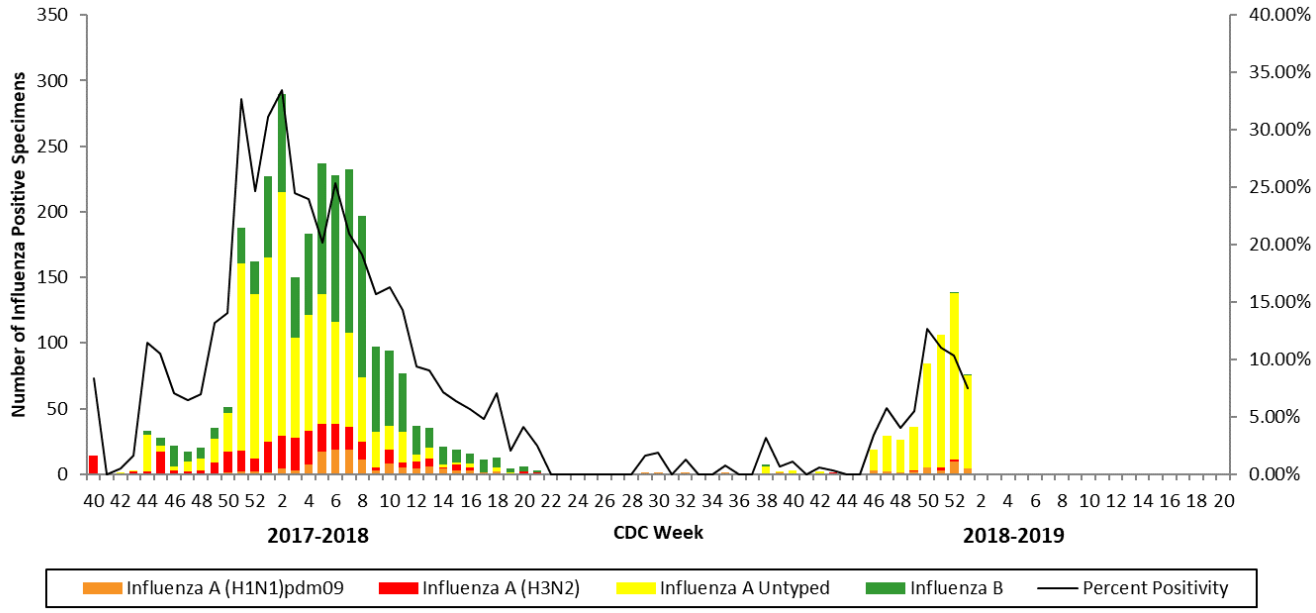
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

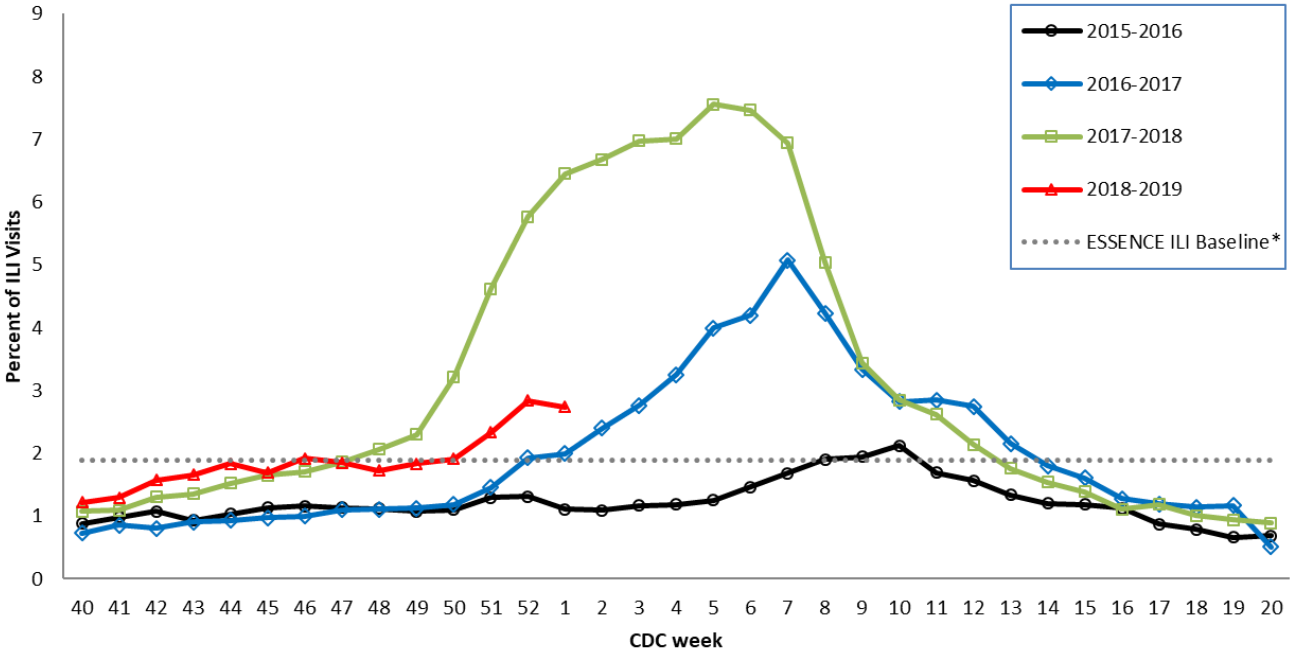
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

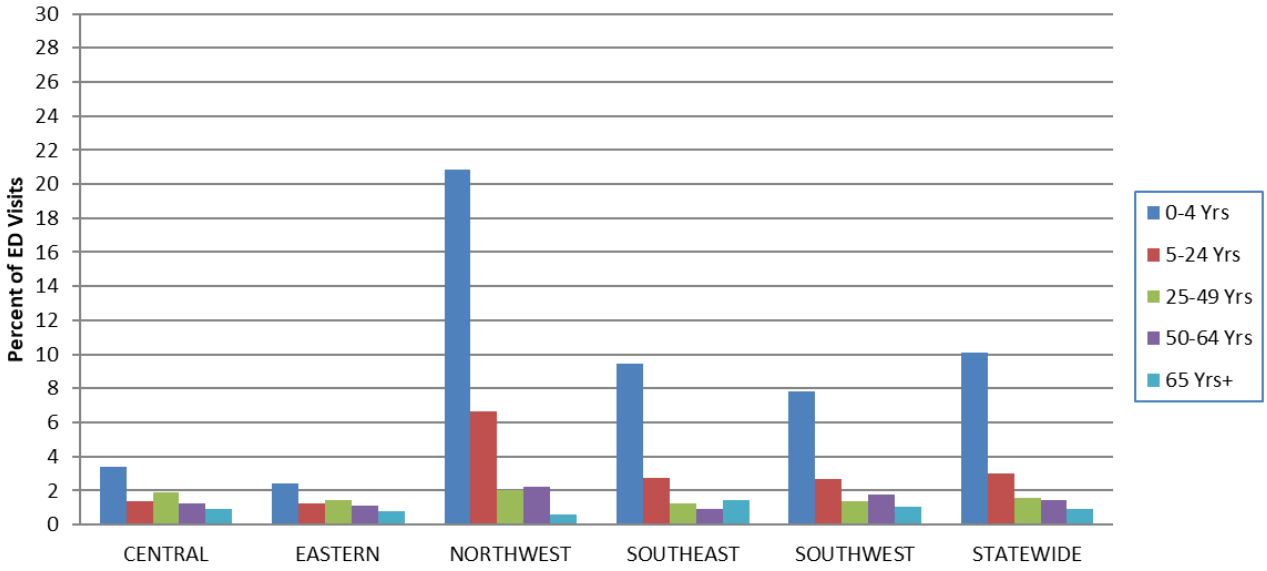
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

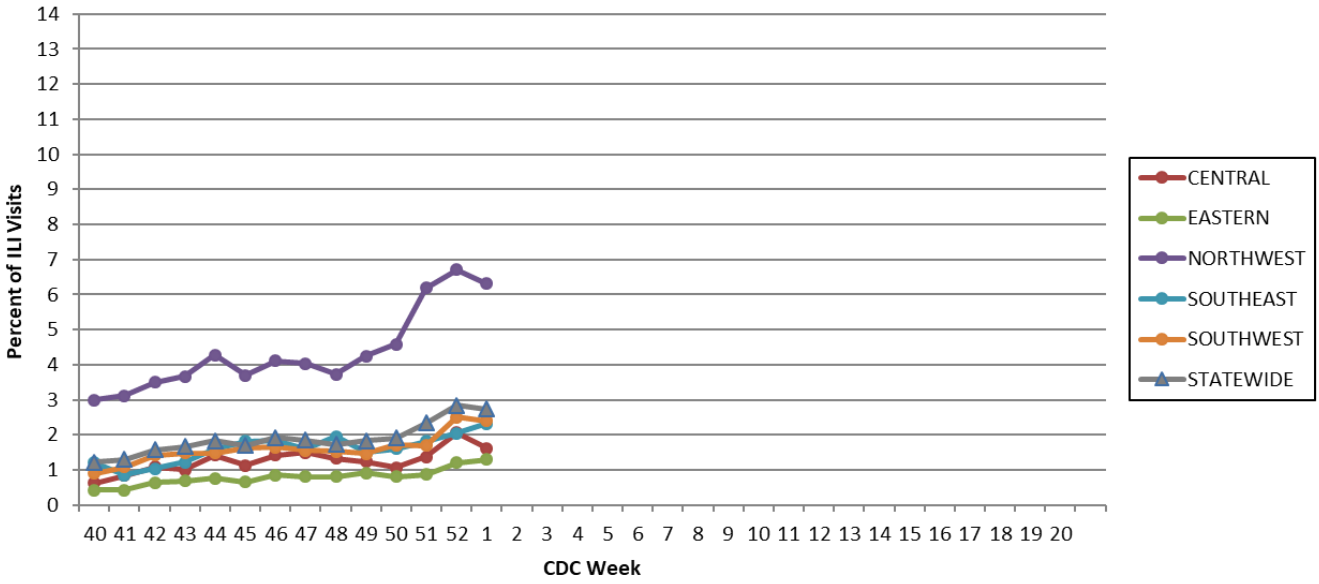
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 1, 2019*



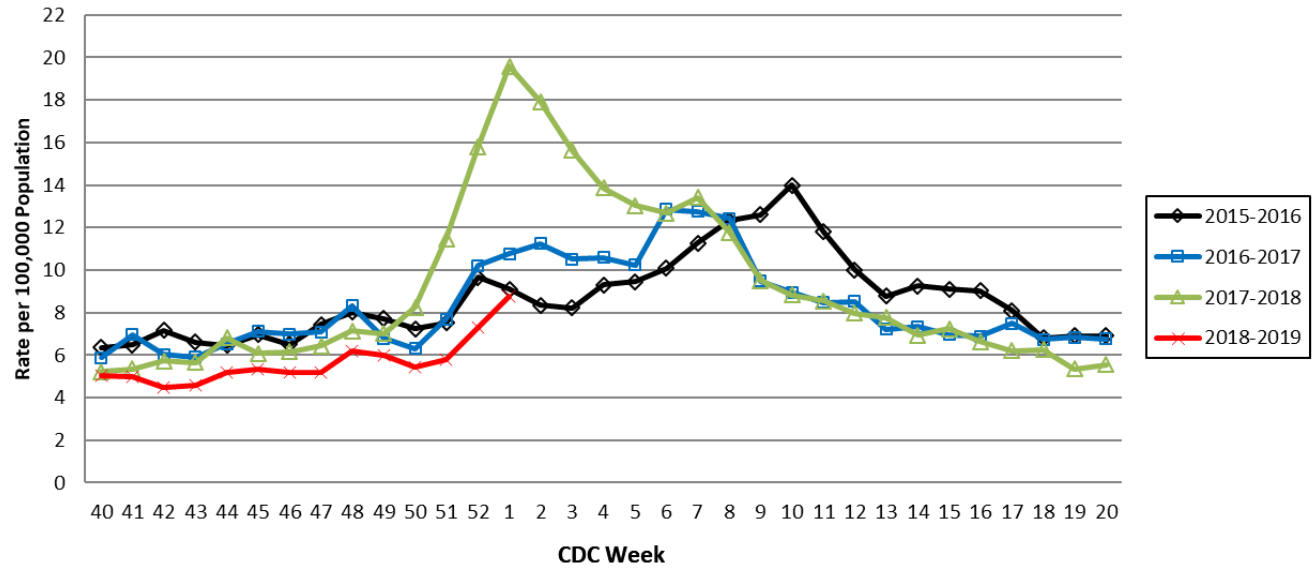
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



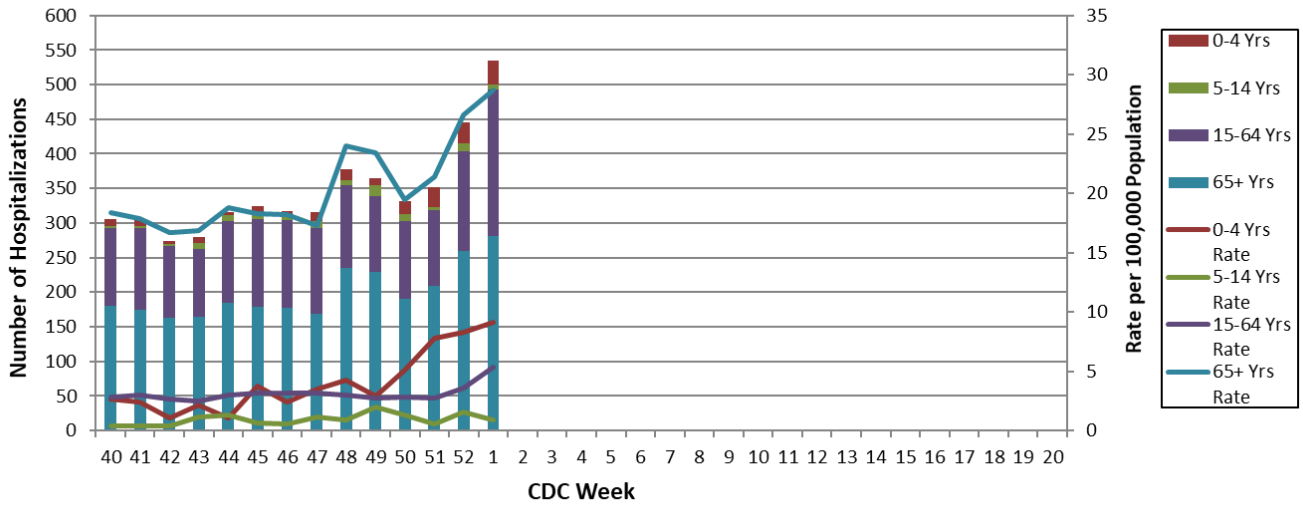
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 1, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 2: January 6, 2019 – January 12, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- During Week 2, a total of 909 laboratory-positive[3] influenza cases (816 influenza A, 87 influenza B, and six untyped) were reported. A season-to-date total of 6,822 laboratory-positive influenza cases have been reported in Missouri as of Week 2. The influenza type for reported season-to-date cases includes 80.6% influenza A, 18.6% influenza B and 0.8% untyped. One laboratory-positive case of influenza A (H1N1) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 2. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased slightly during Week 2 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.59 % (Figure 5) and 2.39% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of four influenza-associated deaths have been reported in Missouri as of Week 2.[5] During Week 1, 46 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 637 P&I associated deaths in Missouri.[6]

- A season-to-date total of one influenza outbreak has been reported in Missouri as of Week 2. No ILI-associated outbreaks or school closures have been reported.

- Influenza activity in the United States remained elevated during Week 1. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 2**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 2**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 2 (January 6, 2019 – January 12, 2019)*

Influenza Type	Week 52	Week 1	Week 2	2018-2019* Season-to-Date
Influenza A	950	1,033	816	5,496
Influenza B	82	139	87	1,269
Influenza Unknown Or Untyped	10	6	6	57
Total	1,042	1,178	909	6,822

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 2 (January 6, 2019 – January 12, 2019)*‡

Age Group	Week 2 Cases	Week 2 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	212	56.63	1,452	387.86
05-24	216	13.46	2,185	136.18
25-49	234	12.23	1,644	85.92
50-64	125	10.11	885	71.58
65+	122	12.78	656	68.70
Total	909	14.94	6,822	112.14

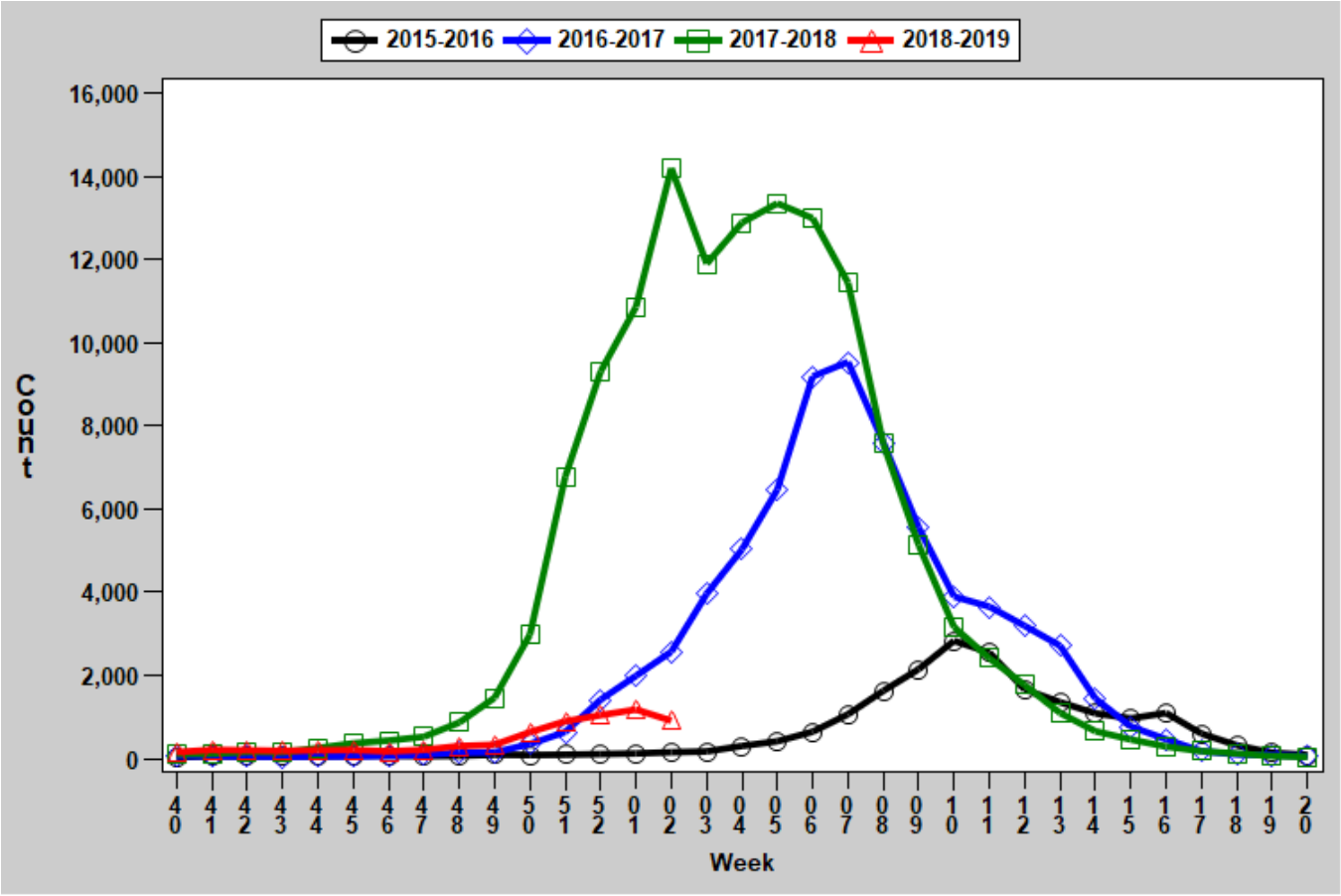
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 2 (January 6, 2019 – January 12, 2019)[*‡]

Region	Week 2 Cases	Week 2 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	75	11.08	657	97.05
Eastern	314	13.86	1,935	85.39
Northwest	250	15.65	2,412	150.98
Southeast	81	17.17	789	167.27
Southwest	189	17.64	1,029	96.05
Total	909	14.94	6,822	112.14

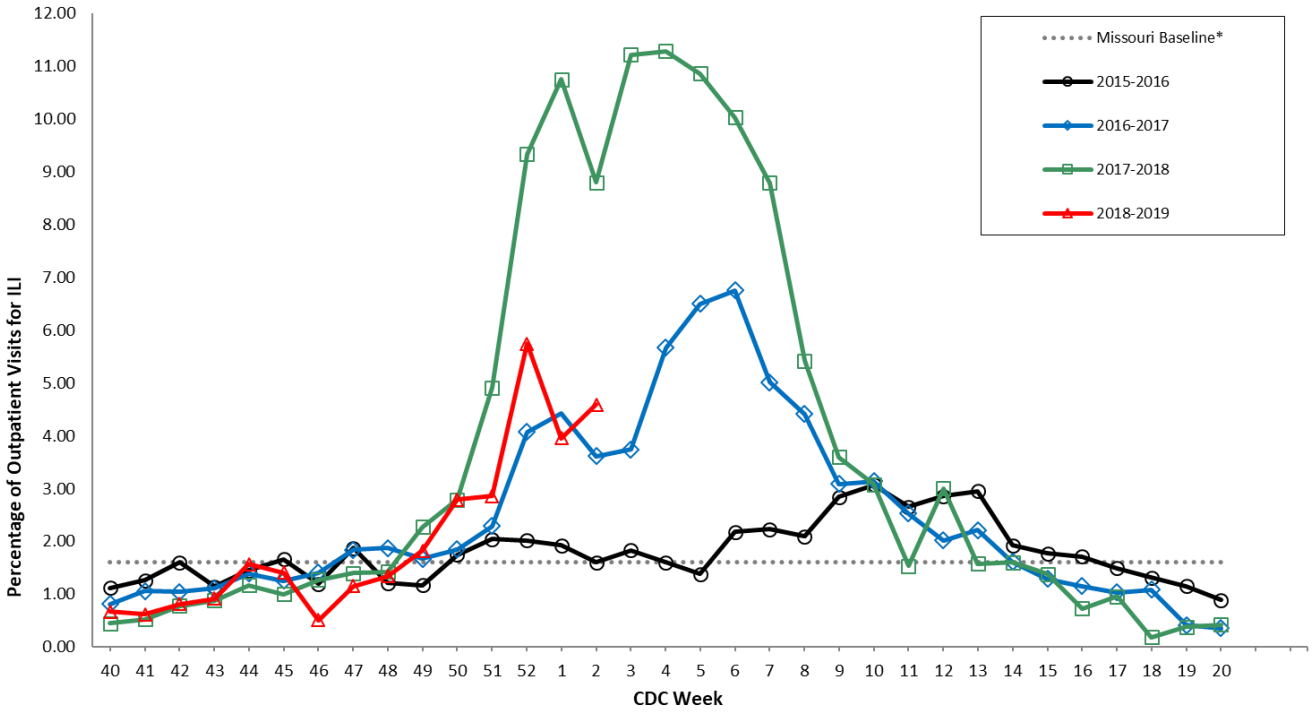
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

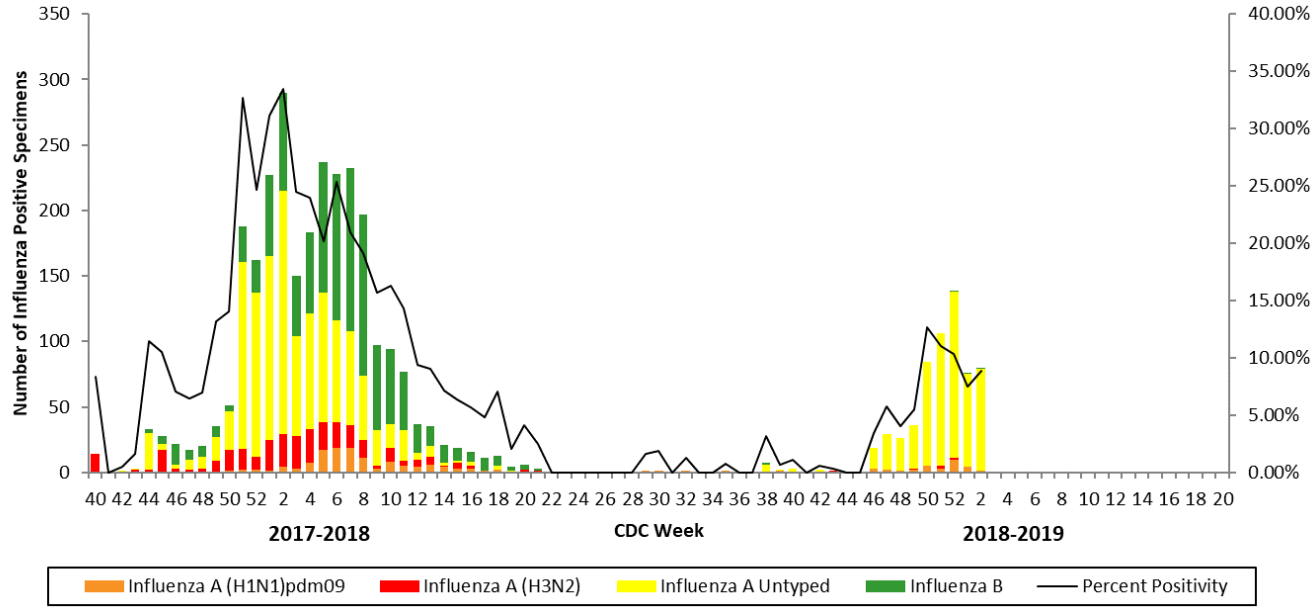
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

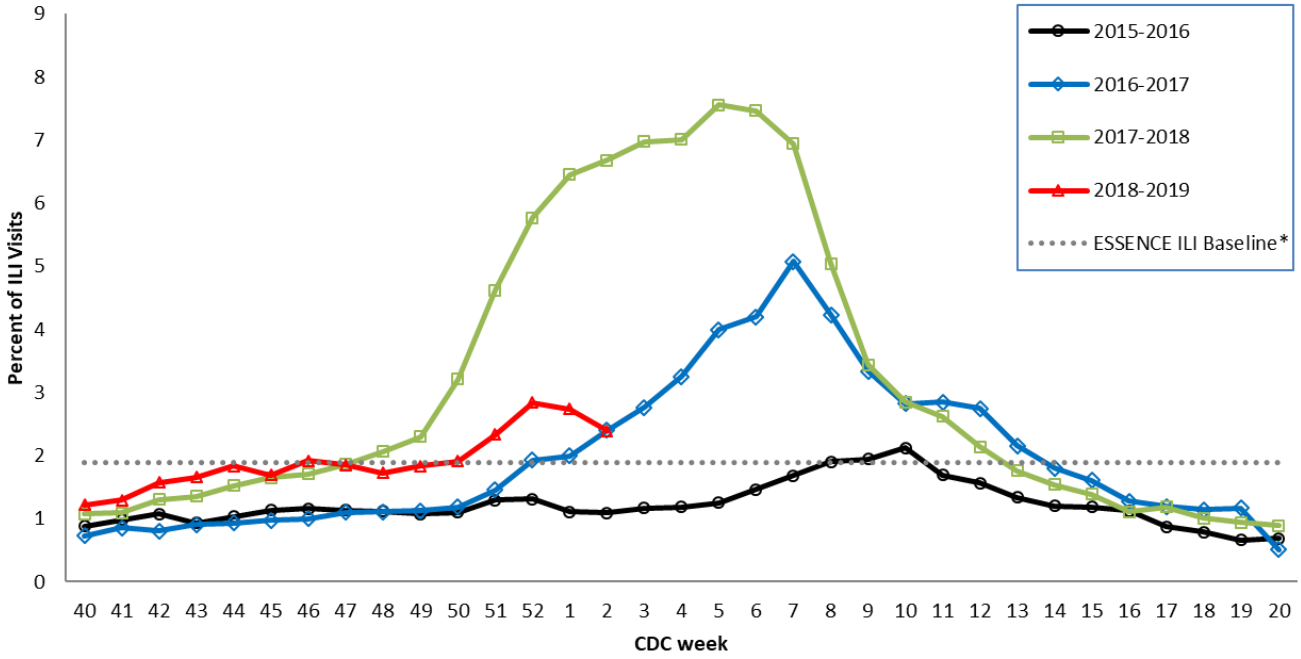
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

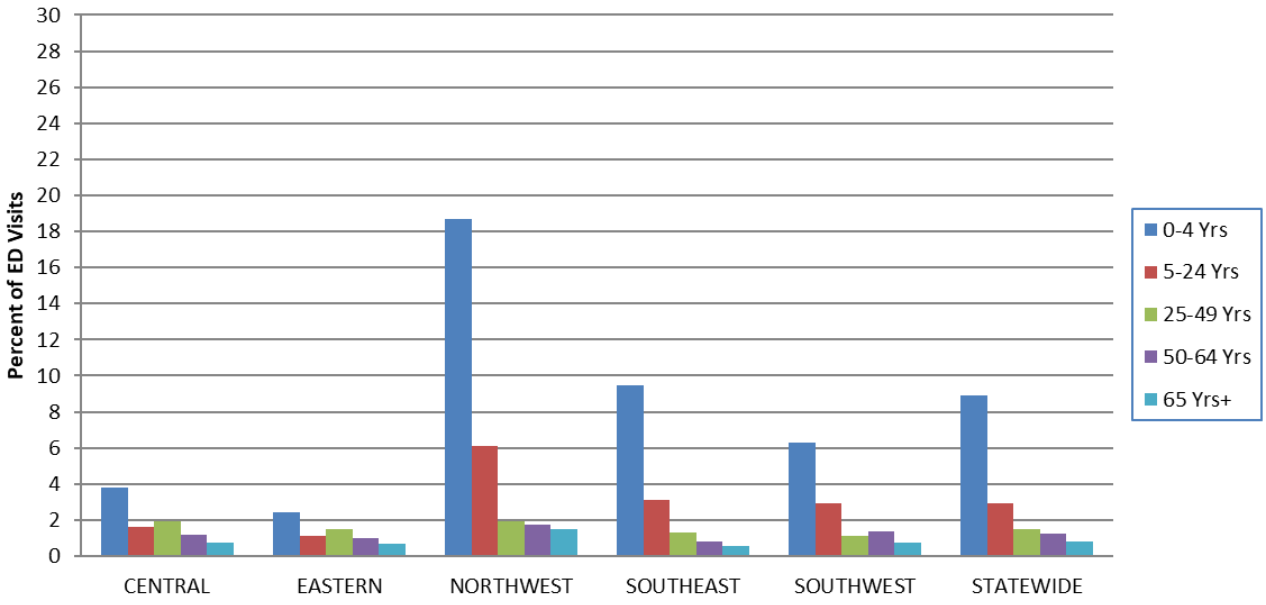
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

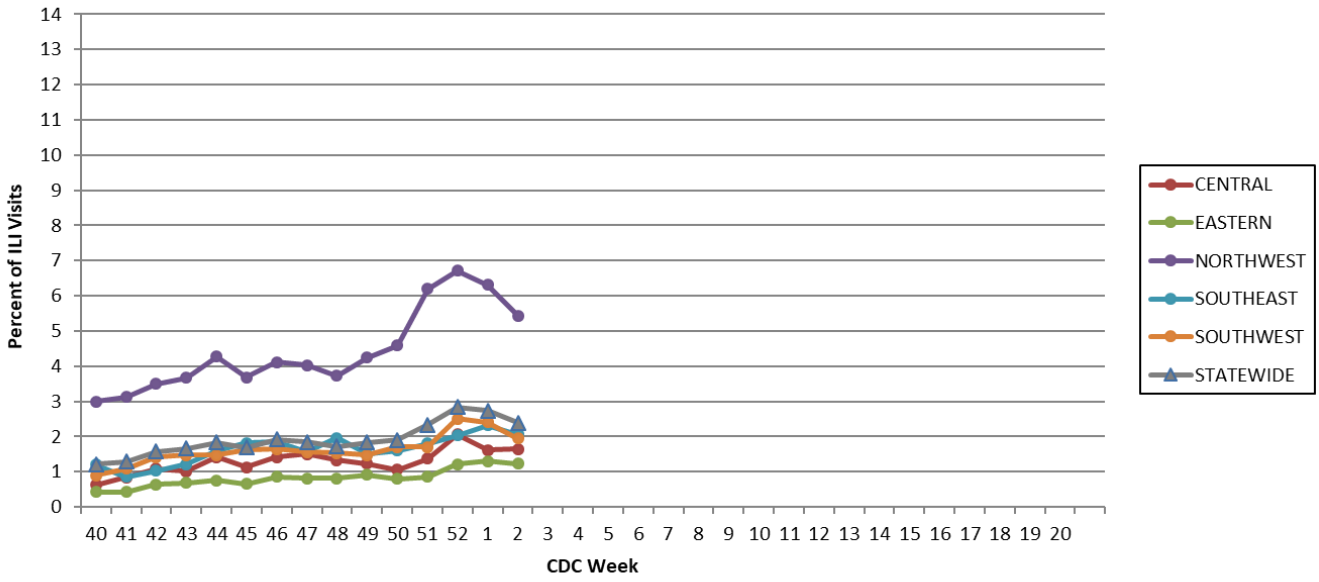
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 2, 2019*



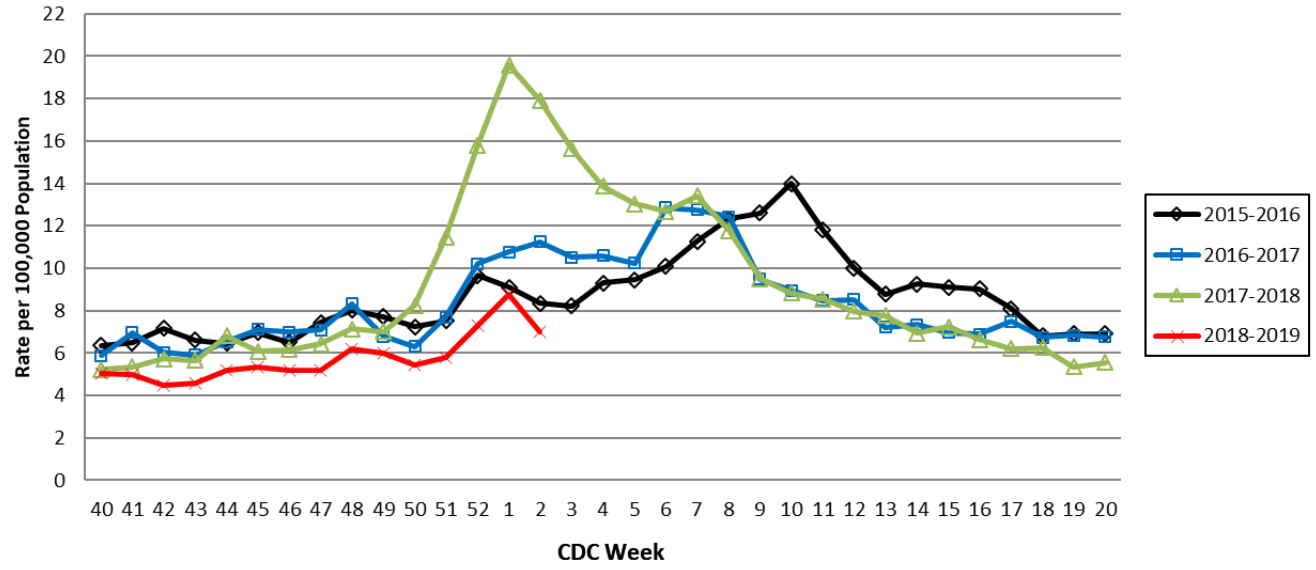
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



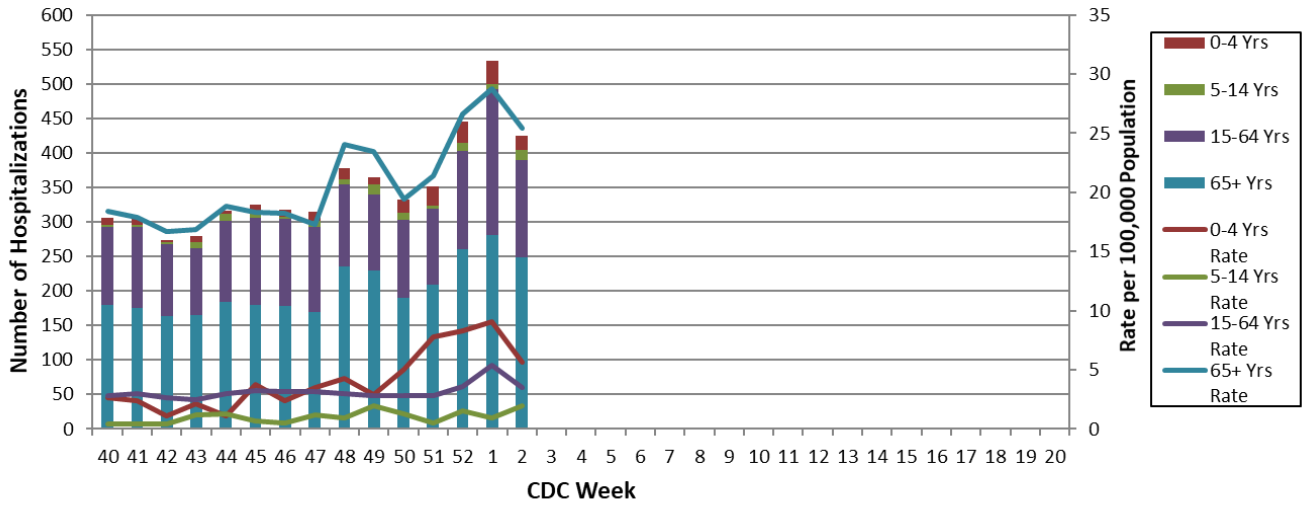
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 2, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 3: January 13, 2019 – January 19, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- During Week 3, a total of 922 laboratory-positive[3] influenza cases (852 influenza A, 66 influenza B, and four untyped) were reported. A season-to-date total of 7,988 laboratory-positive influenza cases have been reported in Missouri as of Week 3. The influenza type for reported season-to-date cases includes 82.2% influenza A, 17% influenza B and 0.8% untyped. One laboratory-positive case of influenza A (H1N1) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 3. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 3 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.52 % (Figure 5) and 2.51% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of five influenza-associated deaths have been reported in Missouri as of Week 3.[5] During Week 2, 59 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 696 P&I associated deaths in Missouri.[6]

- A season-to-date total of two influenza outbreaks have been reported in Missouri as of Week 3. No influenza or ILI-associated school closures have been reported.

- Influenza activity in the United States remained elevated during Week 2. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 3**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 3**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 3 (January 13, 2019 – January 19, 2019)*

Influenza Type	Week 1	Week 2	Week 3	2018-2019* Season-to-Date
Influenza A	1,052	1,002	852	6,568
Influenza B	143	102	66	1,356
Influenza Unknown Or Untyped	6	7	4	64
Total	1,201	1,111	922	7,988

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 3 (January 13, 2019 – January 19, 2019)*‡

Age Group	Week 3 Cases	Week 3 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	182	48.62	1,671	446.36
05-24	336	20.94	2,579	160.73
25-49	204	10.66	1,925	100.60
50-64	124	10.03	1,049	84.84
65+	76	7.96	764	80.01
Total	922	15.16	7,988	131.30

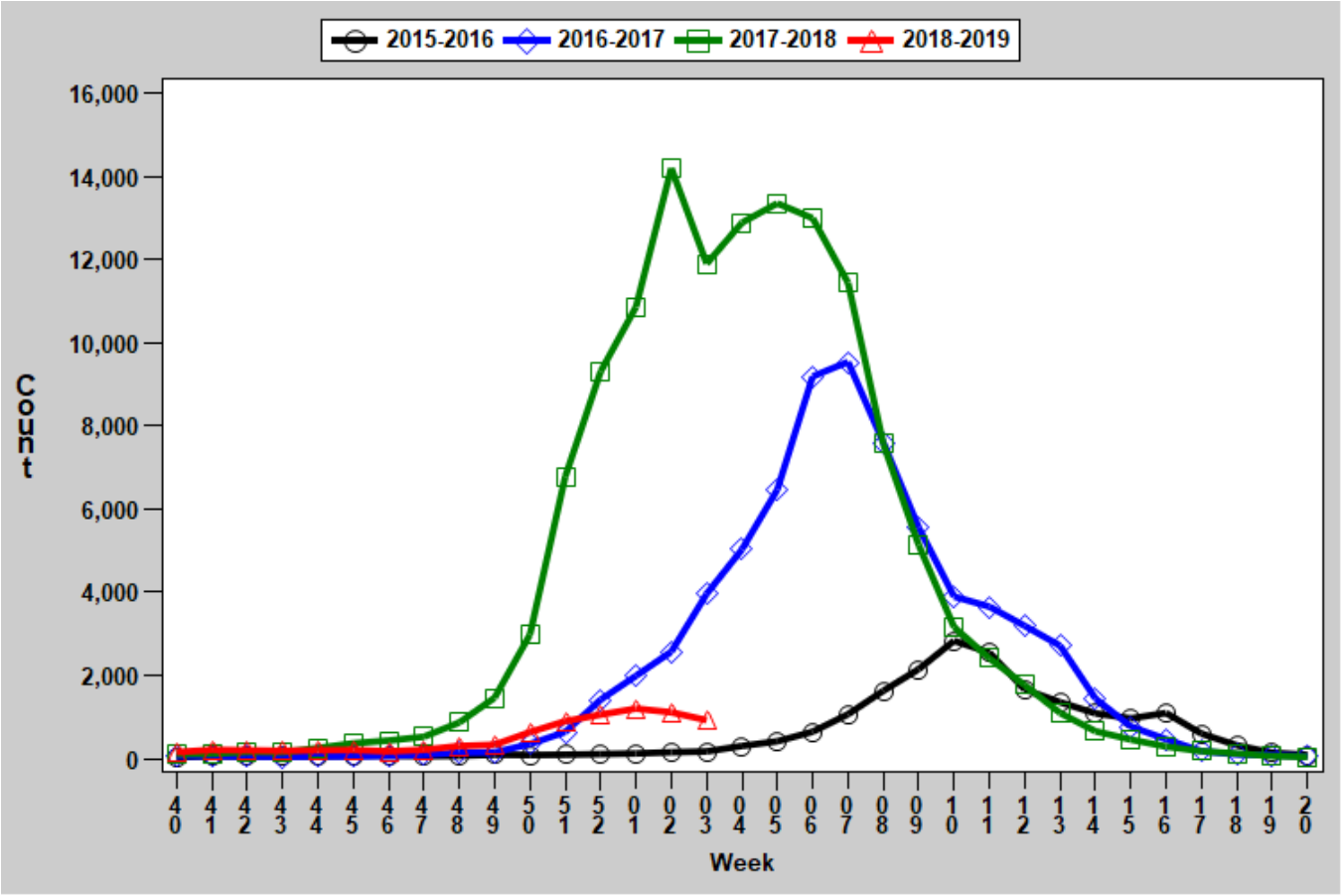
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 3 (January 13, 2019 – January 19, 2019)[*‡]

Region	Week 3 Cases	Week 3 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	65	9.60	789	116.54
Eastern	299	13.19	2,298	101.41
Northwest	237	14.84	2,748	172.02
Southeast	77	16.32	876	185.71
Southwest	244	22.78	1,277	119.20
Total	922	15.16	7,988	131.30

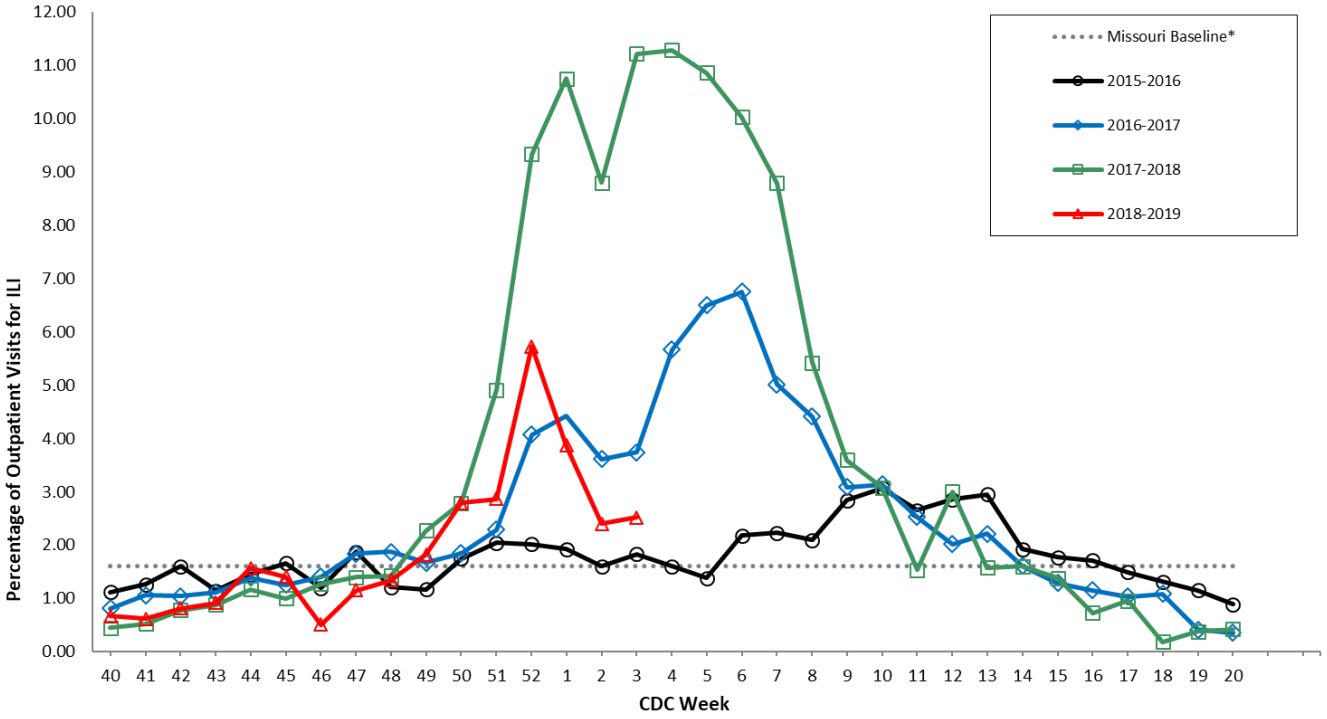
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

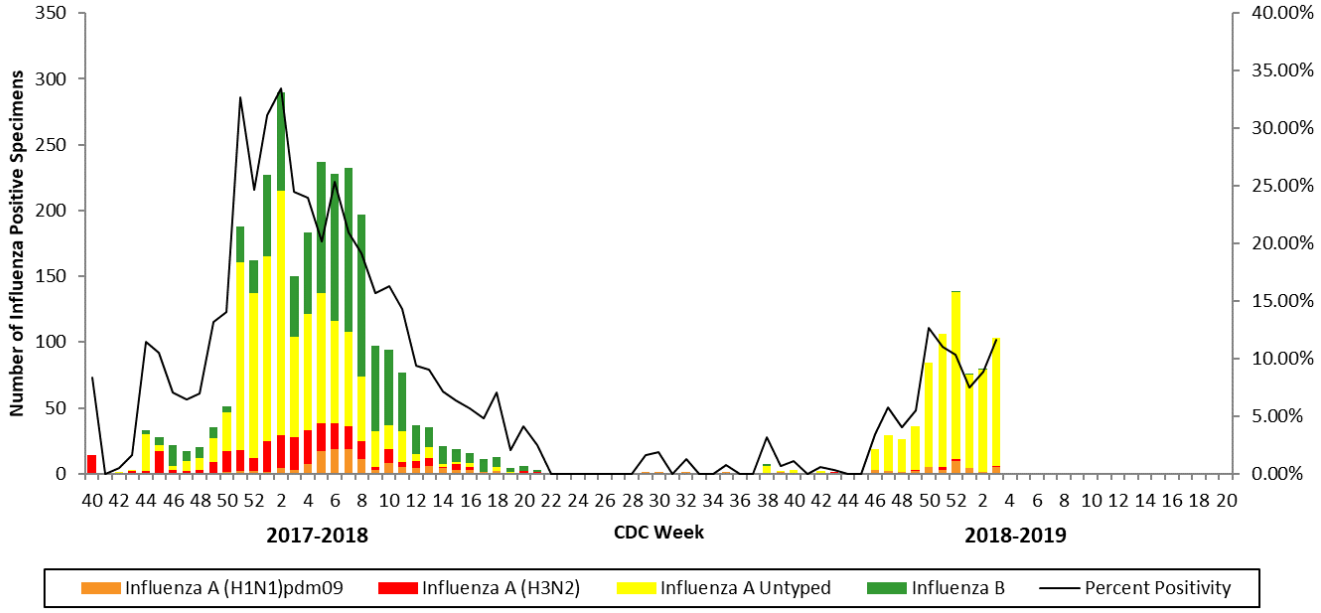
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

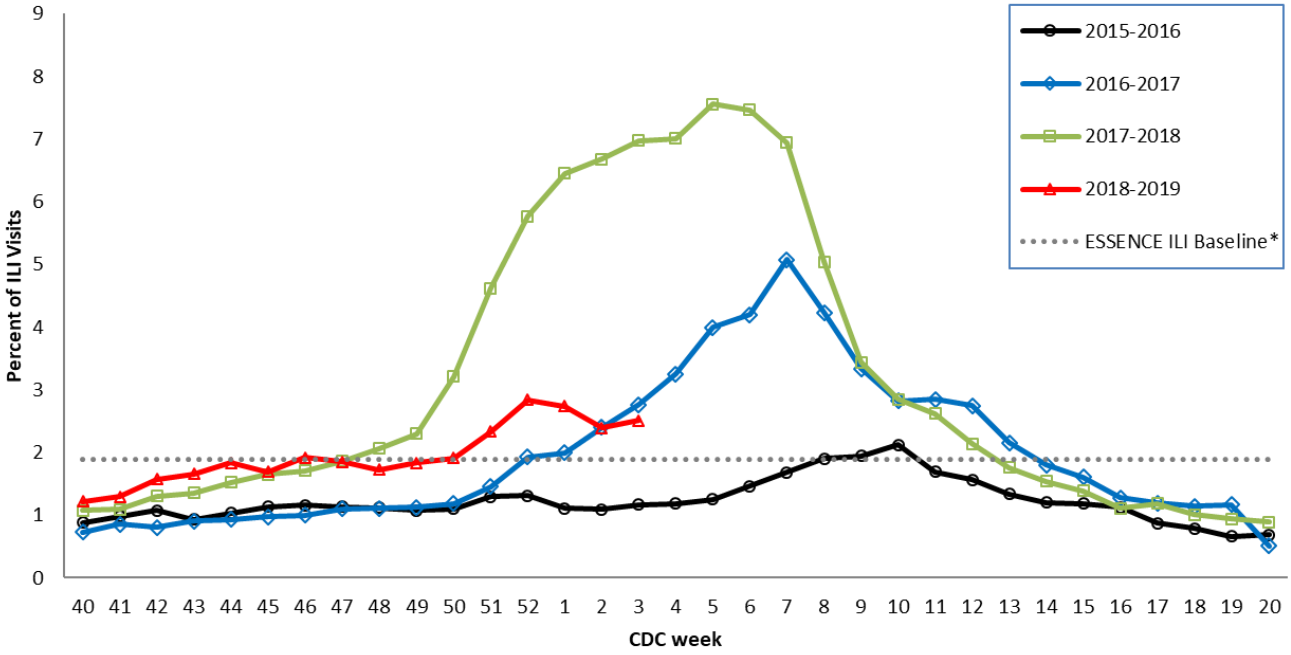
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

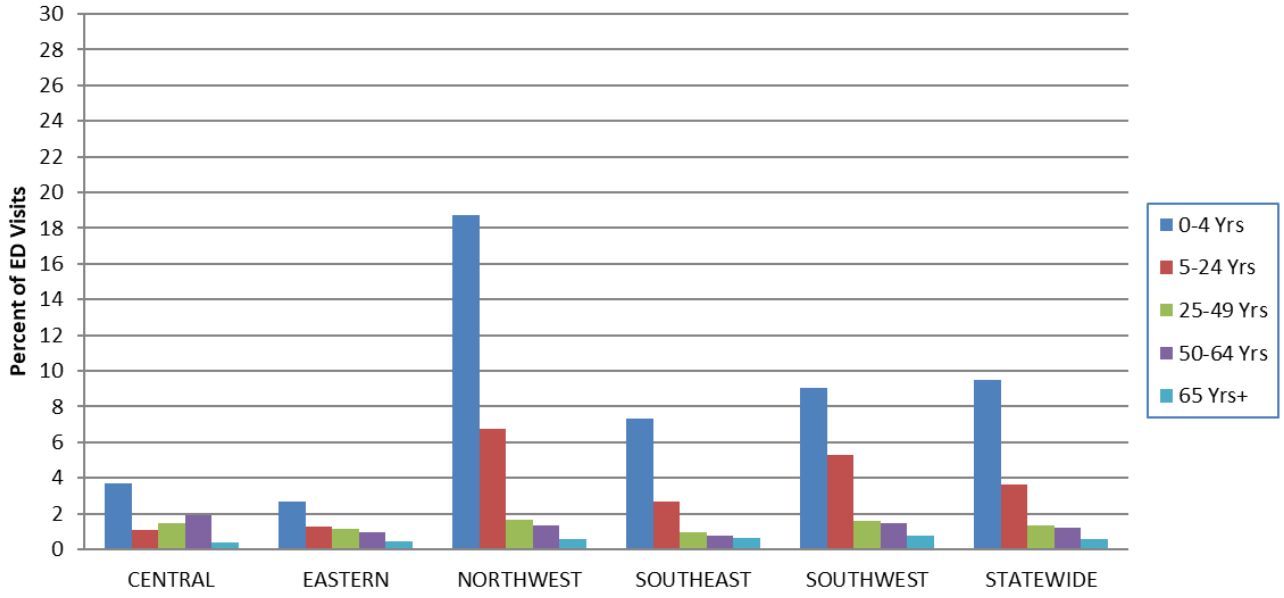
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

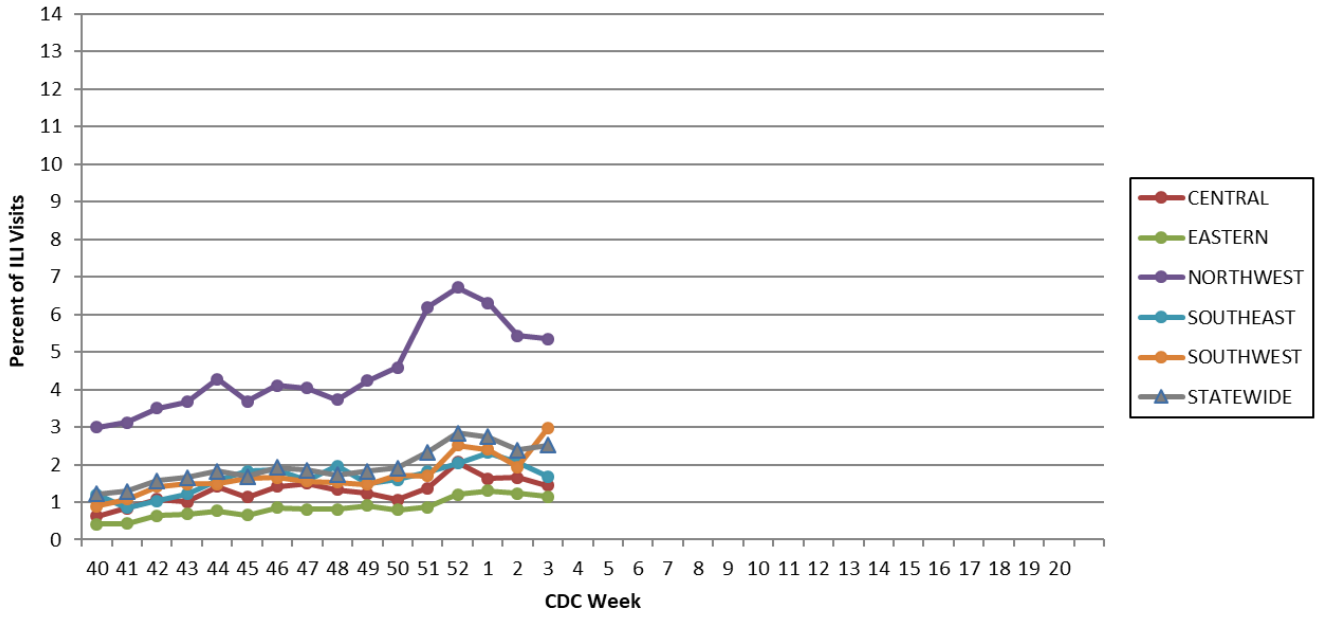
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 3, 2019*



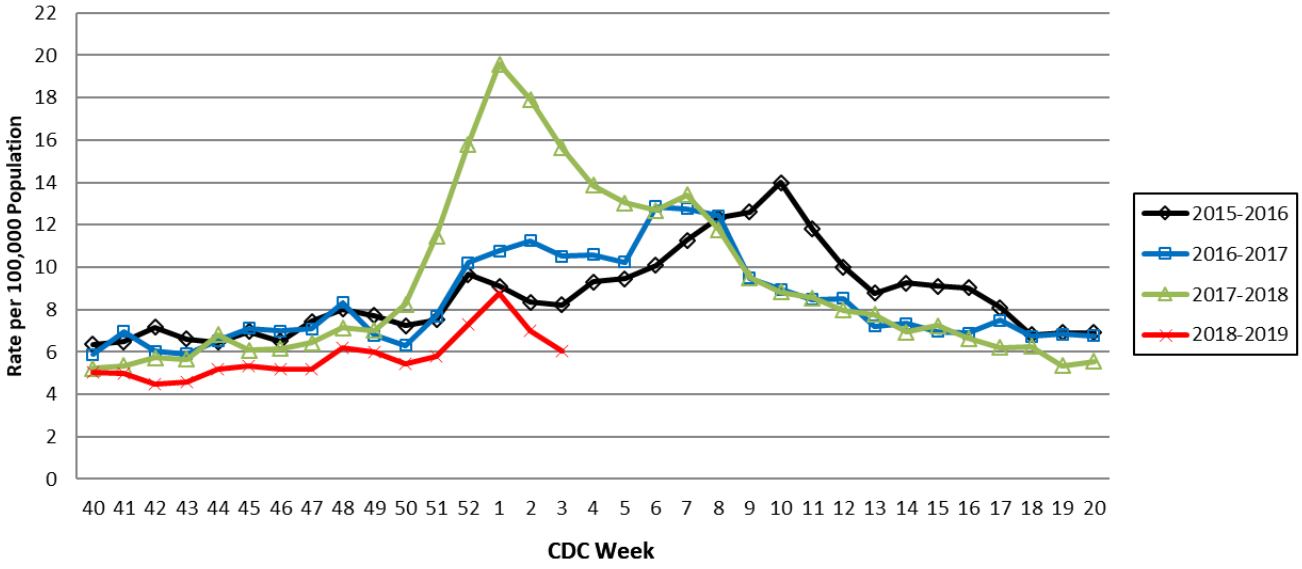
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



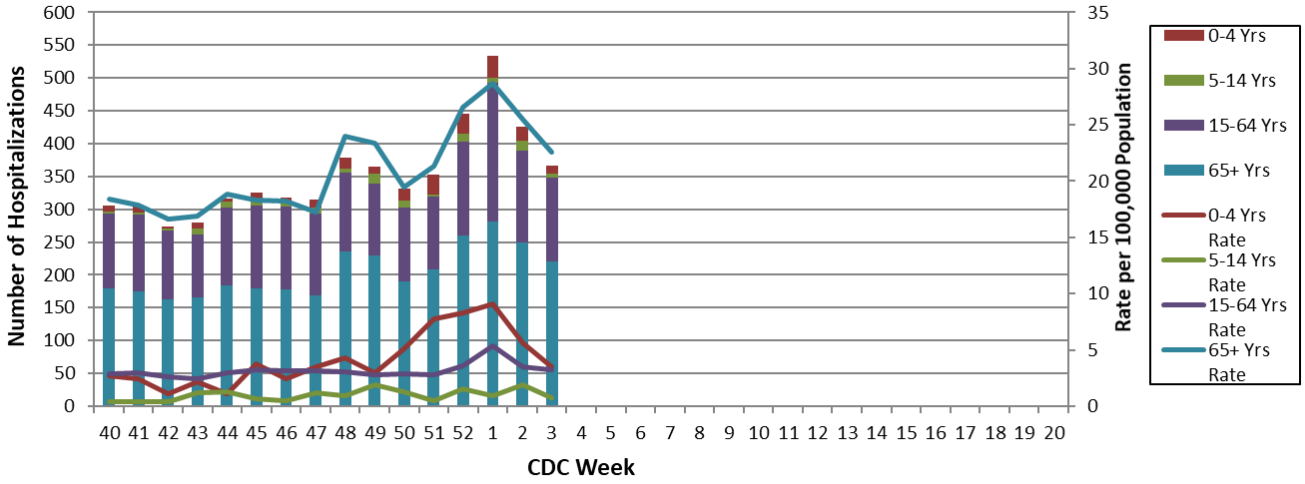
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 3, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 4: January 20, 2019 – January 26, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 4, a total of 1,574 laboratory-positive[3] influenza cases (1,457 influenza A, 108 influenza B, and nine untyped) were reported. A season-to-date total of 10,413 laboratory-positive influenza cases have been reported in Missouri as of Week 4. The influenza type for reported season-to-date cases includes 84.4% influenza A, 14.8% influenza B and 0.8% untyped. Four laboratory-positive case of influenza A (H1N1) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 4. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 4 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 3.67% (Figure 5) and 2.68% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of eight influenza-associated deaths have been reported in Missouri as of Week 4.[5] During Week 3, 78 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 774 P&I associated deaths in Missouri.[6]

- A season-to-date total of two influenza outbreaks and two influenza or ILI-associated school closures have been reported in Missouri as of Week 4.

- Influenza activity in the United States increased during Week 3. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 4**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 4**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 4 (January 20, 2019 – January 26, 2019)*

Influenza Type	Week 2	Week 3	Week 4	2018-2019* Season-to-Date
Influenza A	1,147	1,437	1,457	8,785
Influenza B	115	124	108	1,542
Influenza Unknown Or Untyped	9	15	9	86
Total	1,271	1,576	1,574	10,413

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 4 (January 20, 2019 – January 26, 2019)*‡

Age Group	Week 4 Cases	Week 4 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	331	88.42	2,176	581.26
05-24	673	41.94	3,578	223.00
25-49	329	17.19	2,433	127.15
50-64	163	13.18	1,317	106.52
65+	78	8.17	909	95.19
Total	1,574	25.87	10,413	171.16

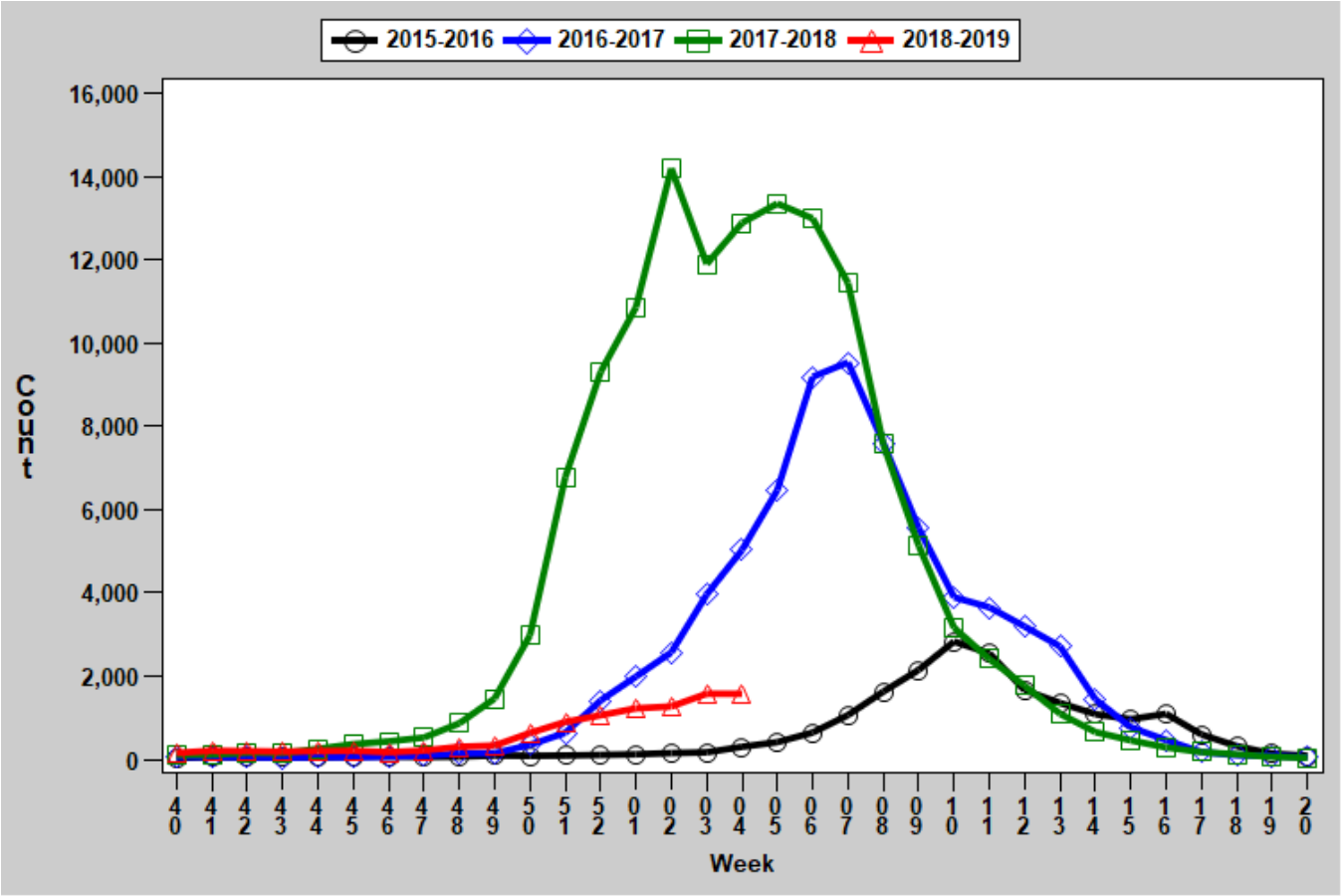
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 4 (January 20, 2019 – January 26, 2019)[*‡]

Region	Week 4 Cases	Week 4 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	78	11.52	937	138.41
Eastern	543	23.96	3,302	145.71
Northwest	216	13.52	3,083	192.99
Southeast	288	61.06	1,302	276.02
Southwest	449	41.91	1,789	166.99
Total	1,574	25.87	10,413	171.16

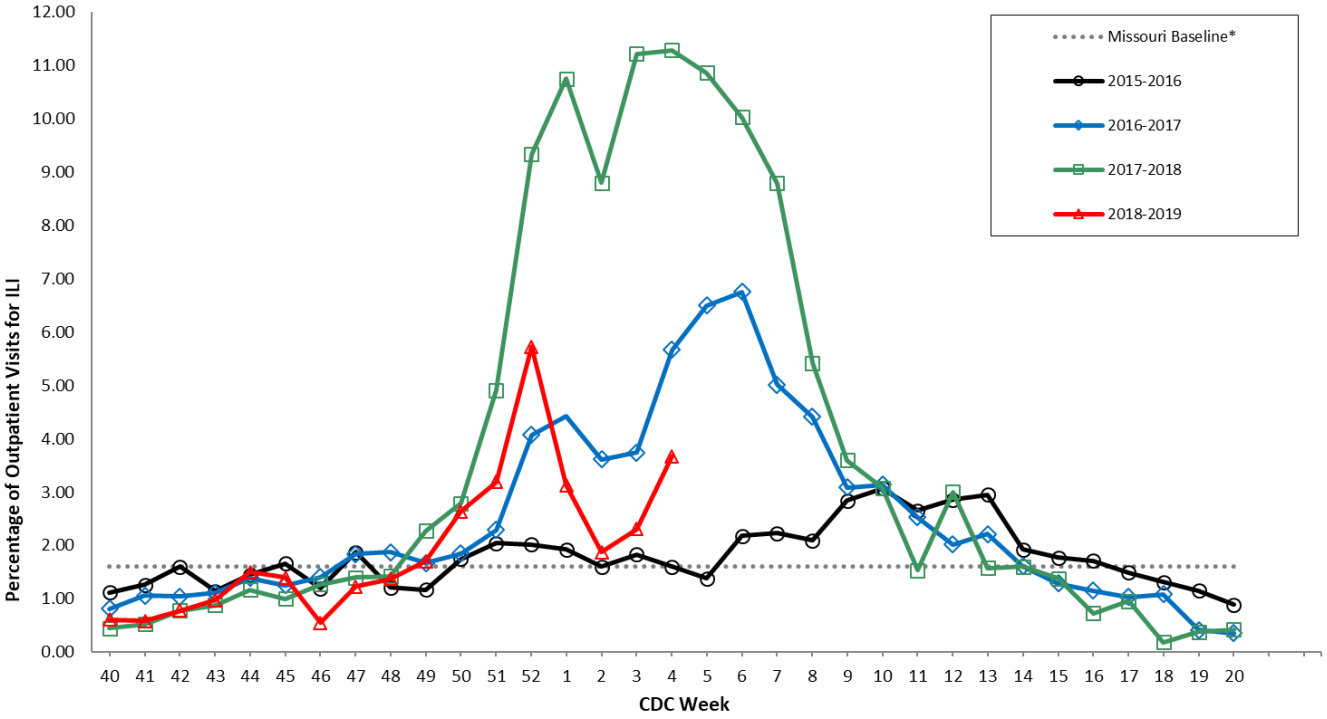
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

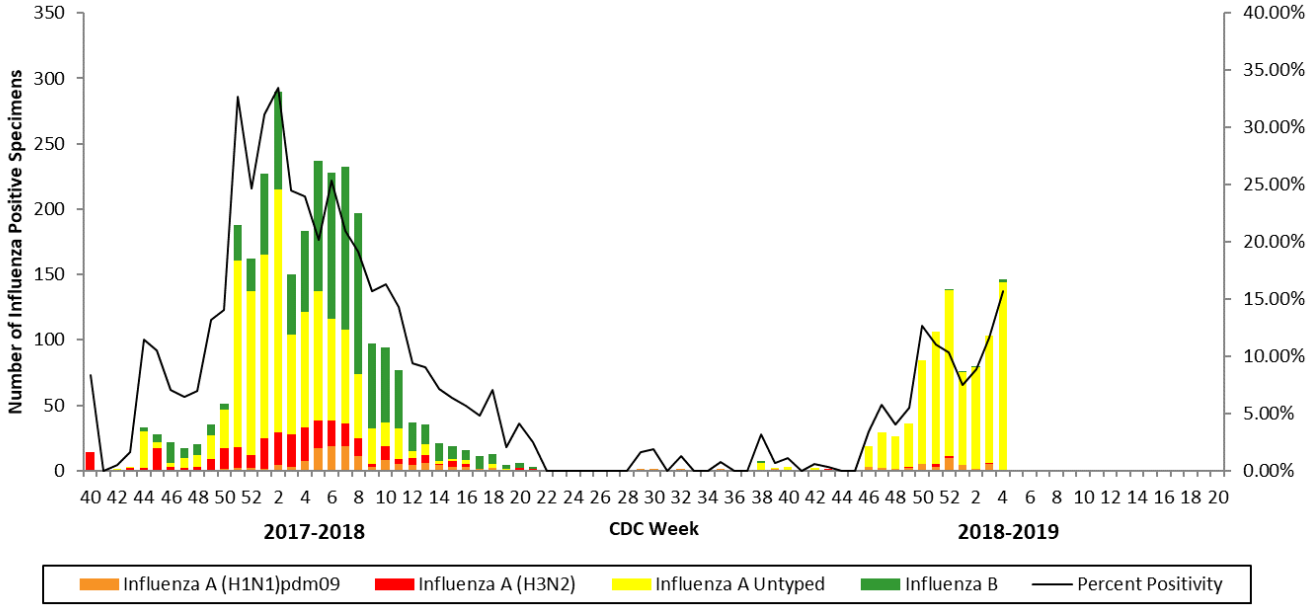
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

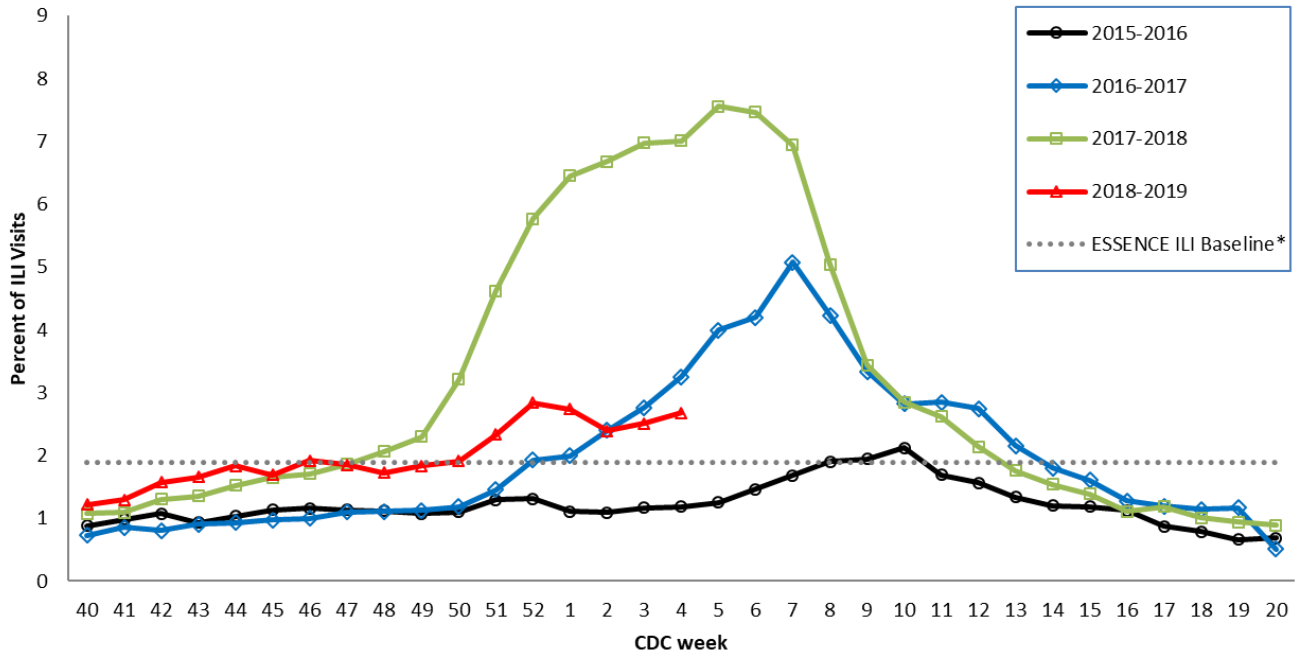
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

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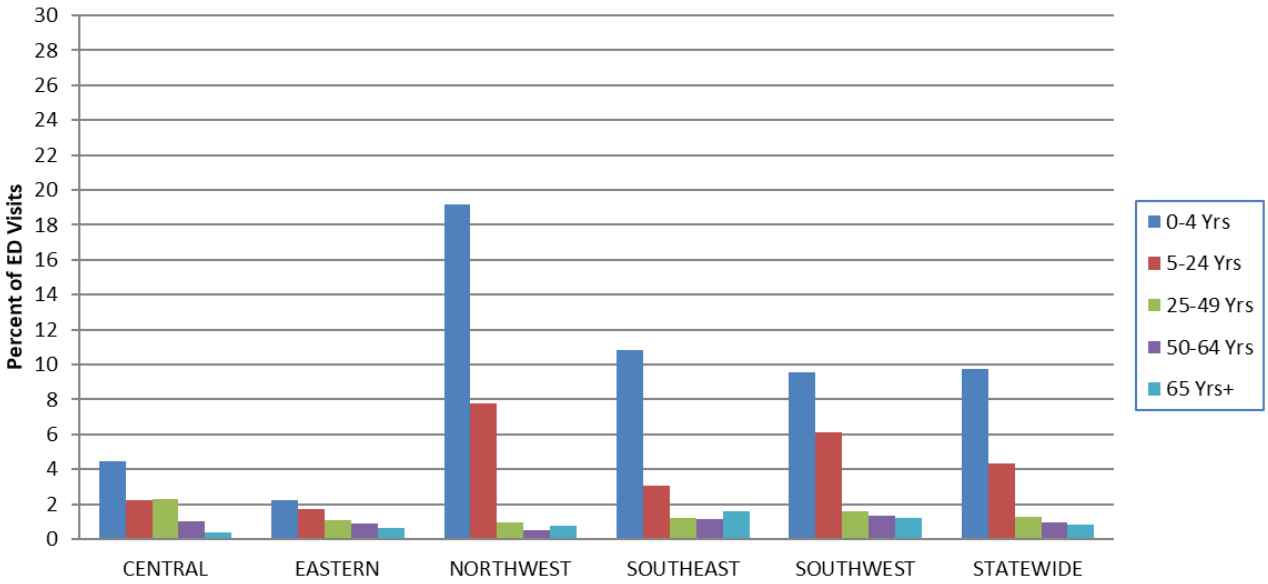
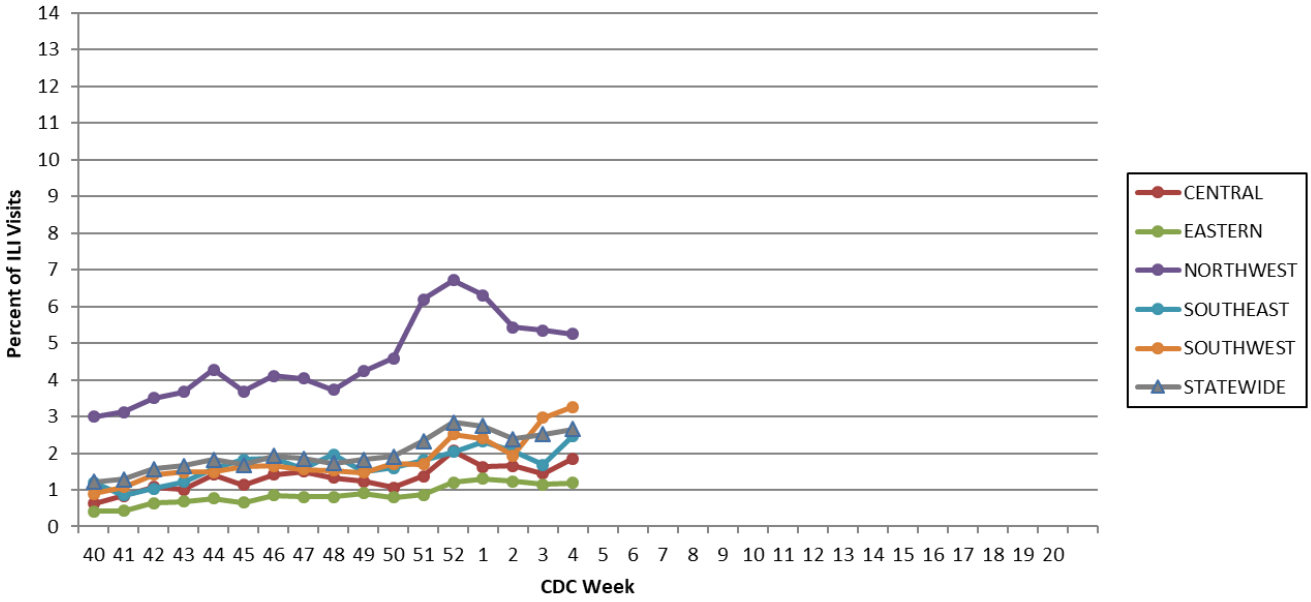


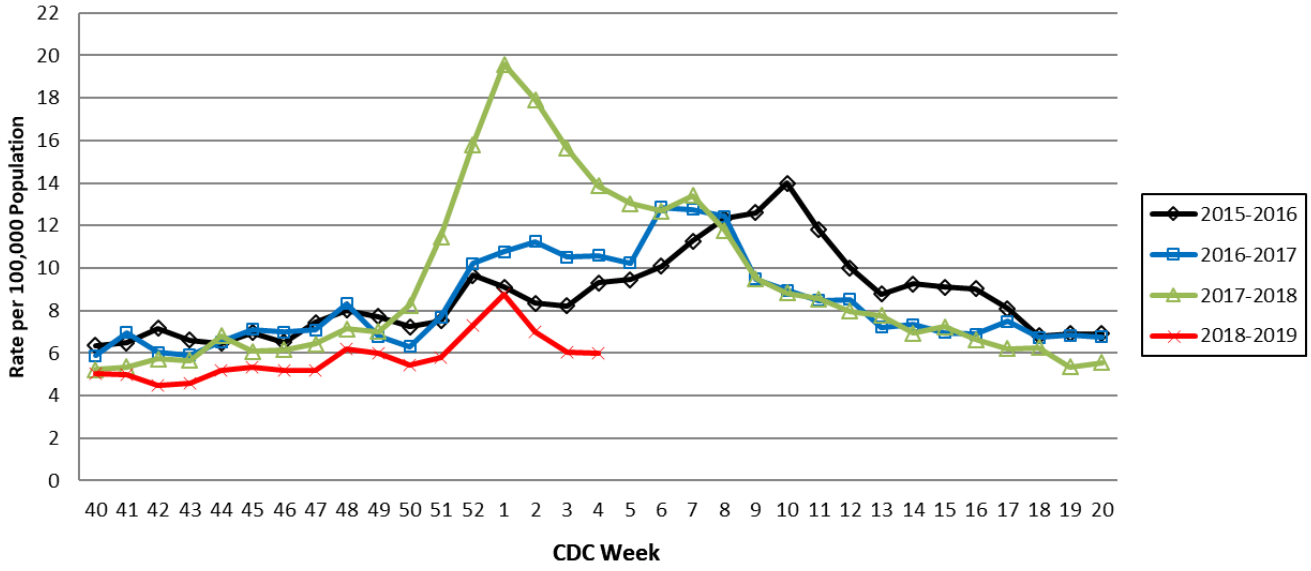
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



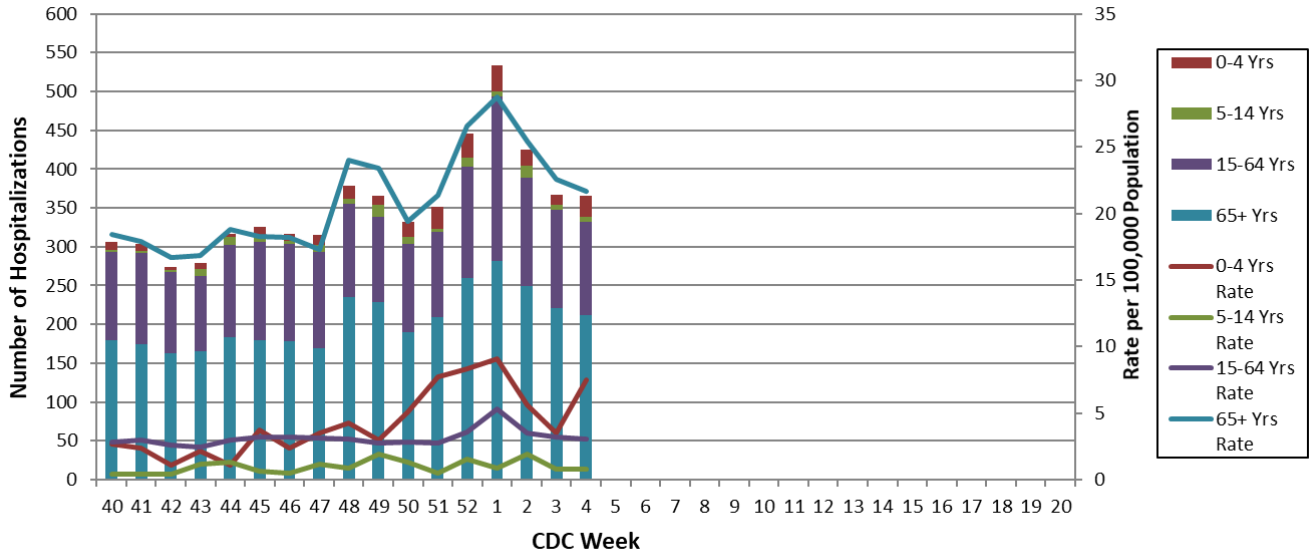
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 4, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 5: January 27, 2019 – February 2, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 5, a total of 2,308 laboratory-positive[3] influenza cases (2,154 influenza A, 138 influenza B, and 16 untyped) were reported. A season-to-date total of 13,413 laboratory-positive influenza cases have been reported in Missouri as of Week 5. The influenza type for reported season-to-date cases includes 86.4% influenza A, 12.8% influenza B and 0.8% untyped. Five laboratory-positive cases of influenza A (2 H1N1 and 3 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 5. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 5 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.88% (Figure 5) and 3.41% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of nine influenza-associated deaths have been reported in Missouri as of Week 5.[5] During Week 4, 83 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 857 P&I associated deaths in Missouri.[6]

- A season-to-date total of two influenza outbreaks and three influenza or ILI-associated school closures have been reported in Missouri as of Week 5.

- Influenza activity in the United States increased during Week 4. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 5**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 5**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 5 (January 27, 2019 – February 2, 2019)*

Influenza Type	Week 3	Week 4	Week 5	2018-2019* Season-to-Date
Influenza A	1,467	2,053	2,154	11,583
Influenza B	126	150	138	1,726
Influenza Unknown Or Untyped	17	9	16	104
Total	1,610	2,212	2,308	13,413

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 5 (January 27, 2019 – February 2, 2019)*‡

Age Group	Week 5 Cases	Week 5 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	455	121.54	2,762	737.79
05-24	1,087	67.75	4,974	310.00
25-49	441	23.05	3,009	157.25
50-64	214	17.31	1,605	129.81
65+	111	11.62	1,063	111.32
Total	2,308	37.94	13,413	220.48

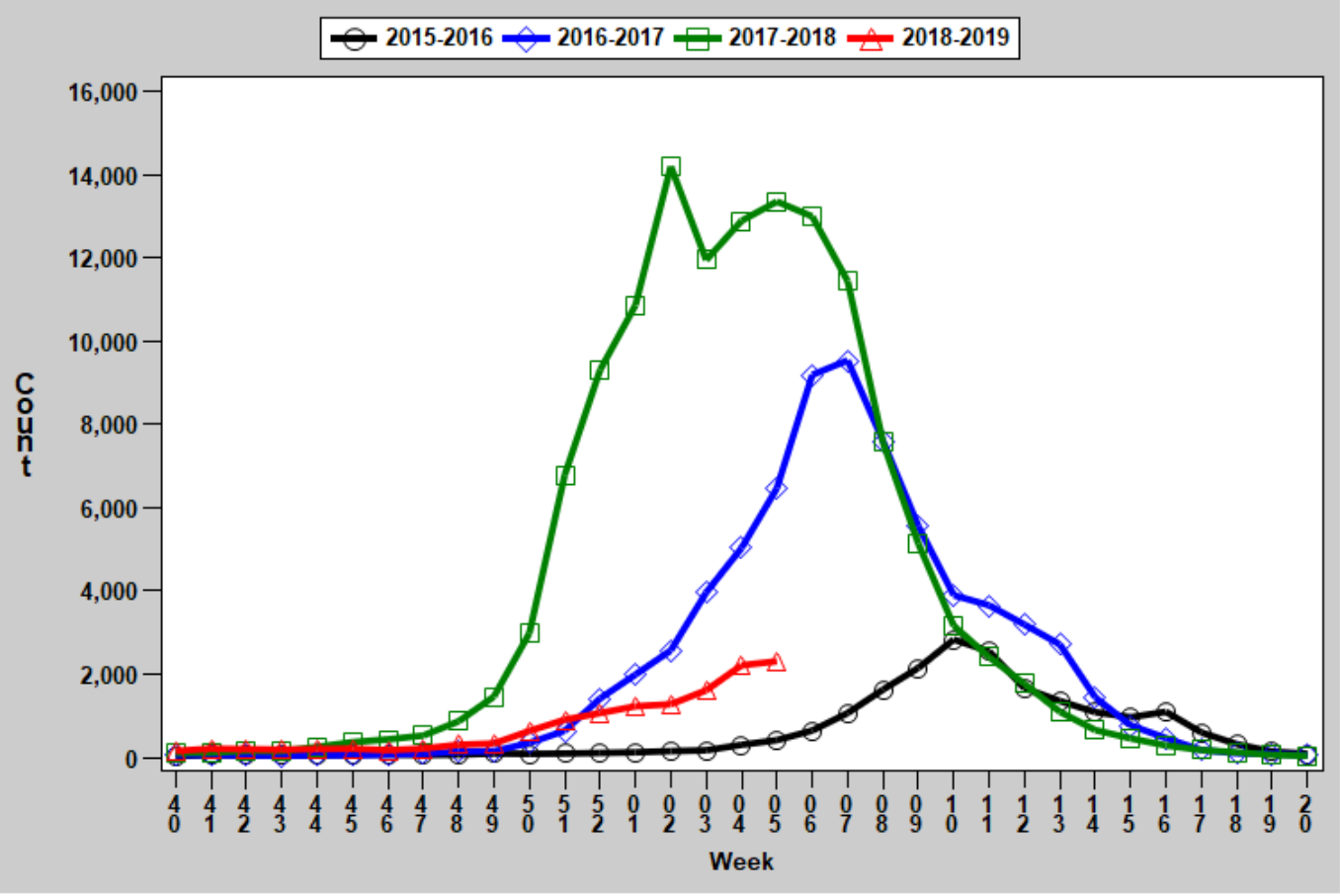
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 5 (January 27, 2019 – February 2, 2019)[*‡]

Region	Week 5 Cases	Week 5 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	127	18.76	1,173	173.26
Eastern	678	29.92	4,194	185.07
Northwest	368	23.04	3,595	225.04
Southeast	502	106.42	1,969	417.43
Southwest	633	59.09	2,482	231.68
Total	2,308	37.94	13,413	220.48

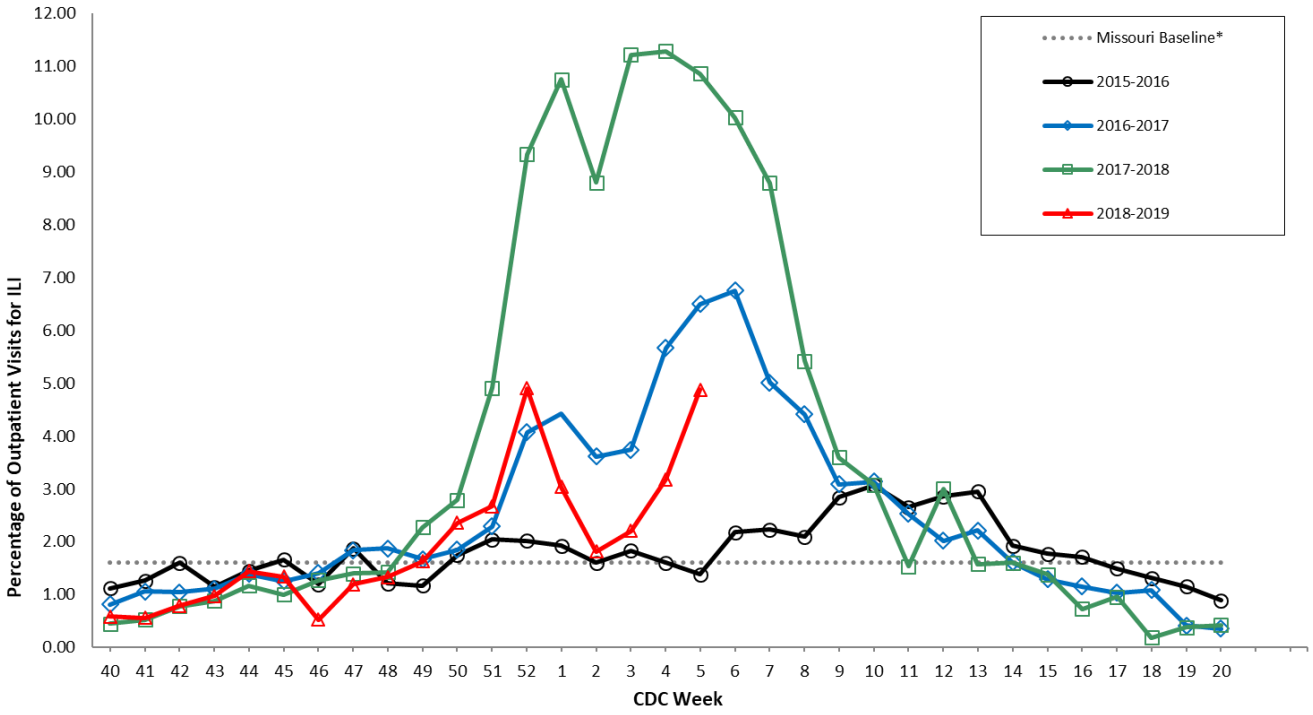
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

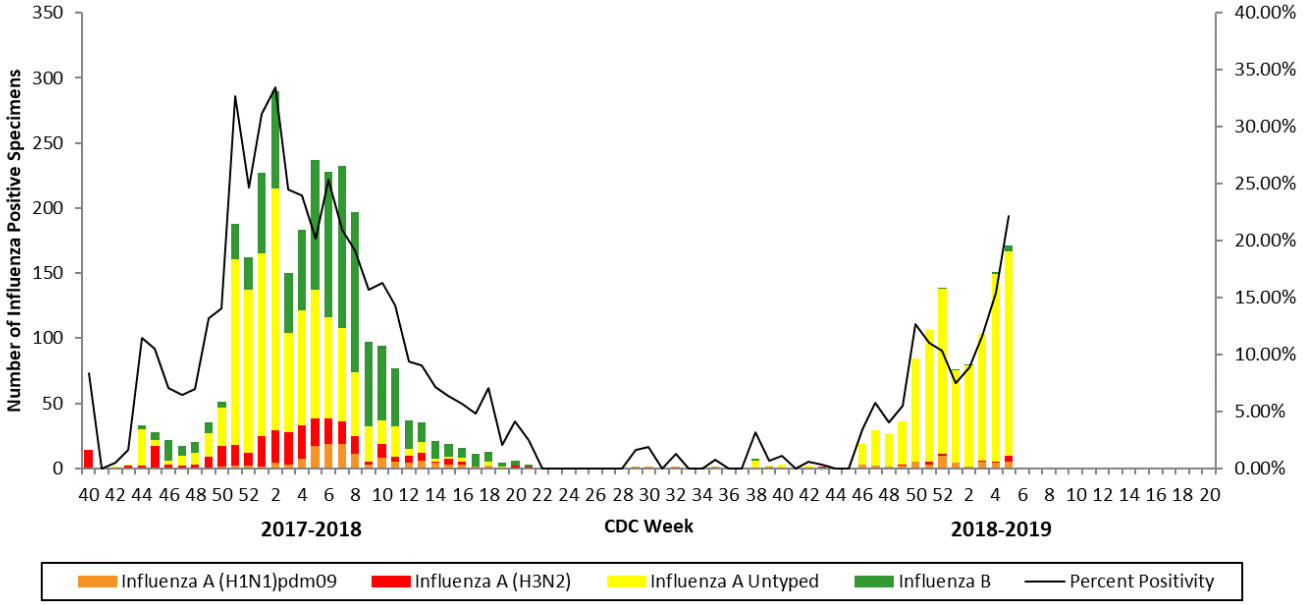
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

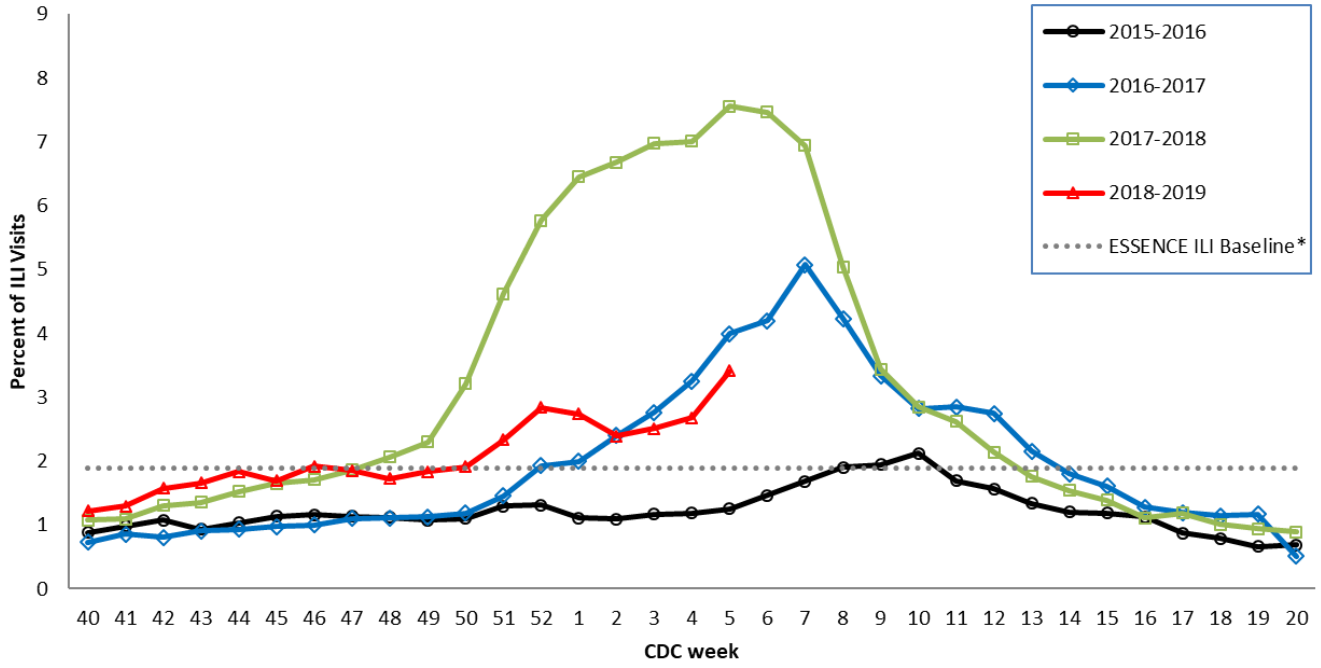
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

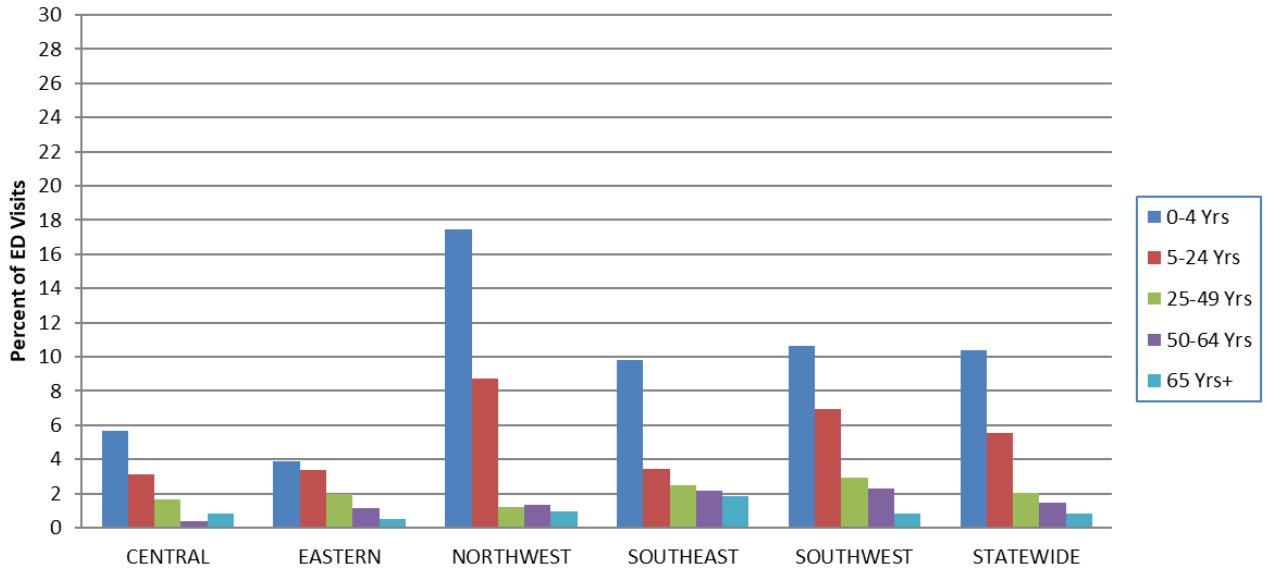
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

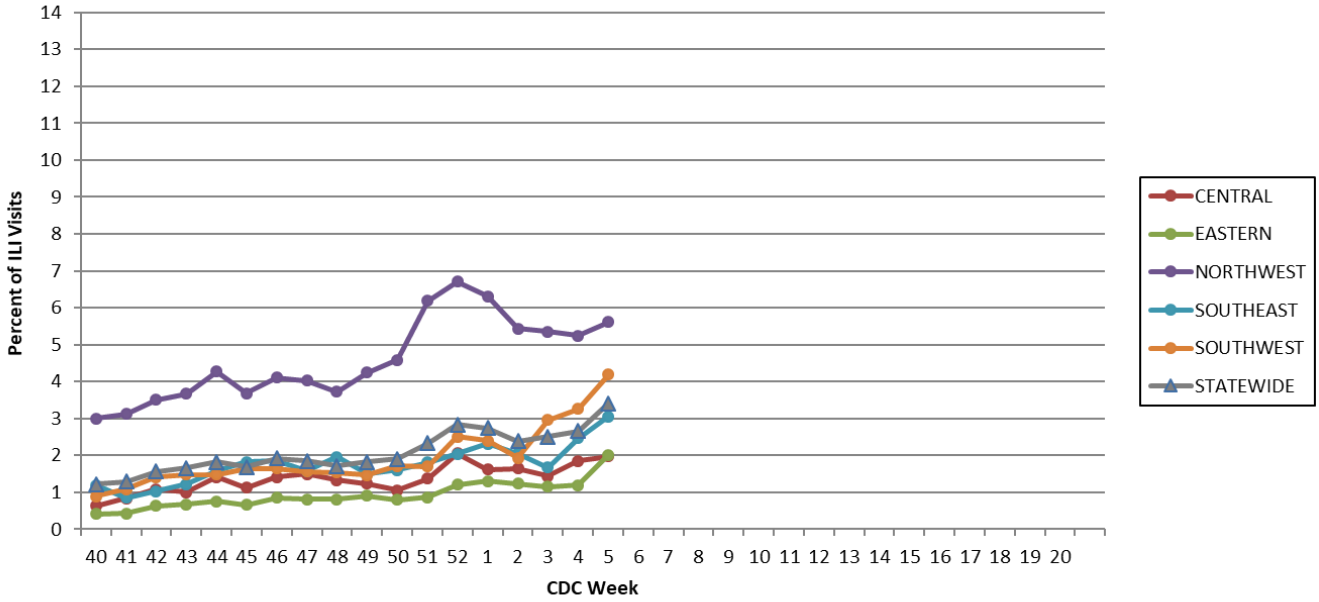
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 5, 2019*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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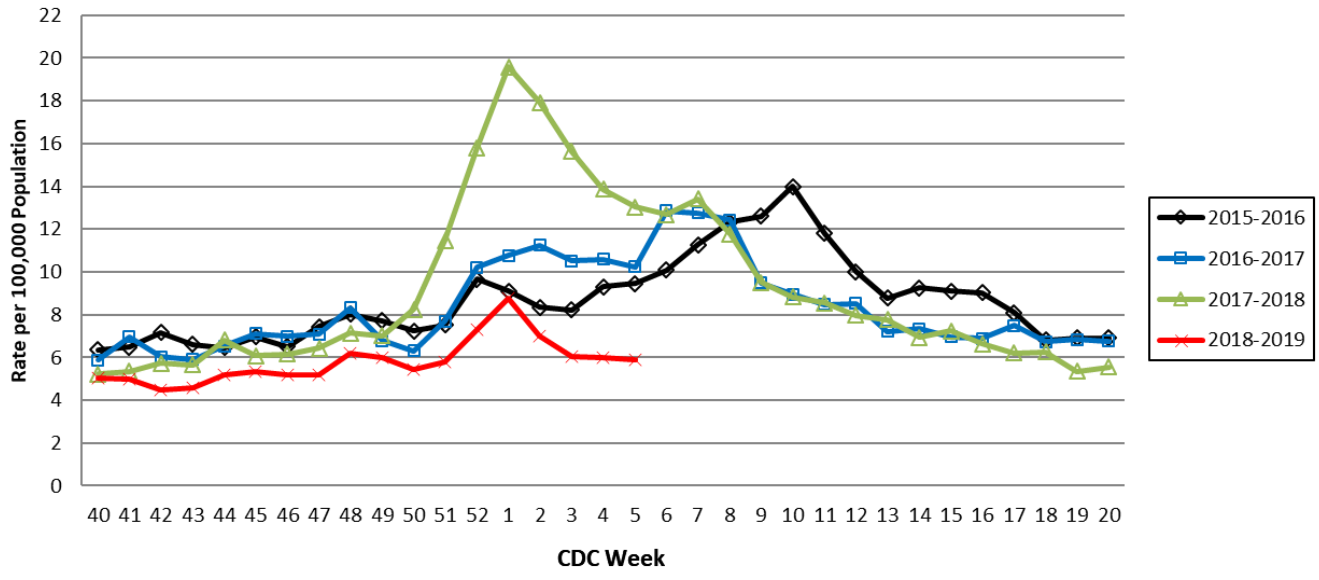
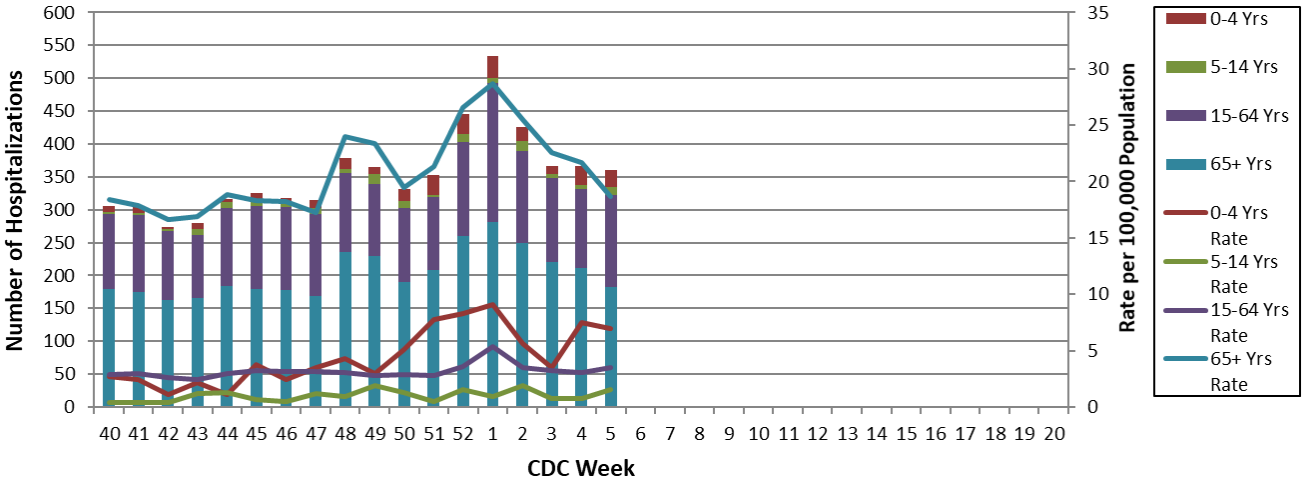
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 5, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 6: February 3, 2019 – February 9, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 6, a total of 3,856 laboratory-positive[3] influenza cases (3,685 influenza A, 153 influenza B, and 18 untyped) were reported. A season-to-date total of 19,015 laboratory-positive influenza cases have been reported in Missouri as of Week 6. The influenza type for reported season-to-date cases includes 88.9% influenza A, 10.4% influenza B and 0.7% untyped. Five laboratory-positive cases of influenza A (3 H1N1 and 2 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 6. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 6 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.30% (Figure 5) and 3.59% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 11 influenza-associated deaths have been reported in Missouri as of Week 6.[5] During Week 5, 77 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 934 P&I associated deaths in Missouri.[6]

- A season-to-date total of four influenza outbreaks and four influenza or ILI-associated school closures have been reported in Missouri as of Week 6.

- Influenza activity in the United States increased during Week 5. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 6**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 6**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 6 (February 3, 2019 – February 9, 2019)*

Influenza Type	Week 4	Week 5	Week 6	2018-2019* Season-to-Date
Influenza A	2,163	3,574	3,685	16,901
Influenza B	162	209	153	1,978
Influenza Unknown Or Untyped	14	24	18	136
Total	2,339	3,807	3,856	19,015

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 6 (February 3, 2019 – February 9, 2019)*‡

Age Group	Week 6 Cases	Week 6 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	674	180.04	3,708	990.49
05-24	1,966	122.53	7,788	485.38
25-49	665	34.75	4,085	213.48
50-64	336	27.18	2,063	166.86
65+	215	22.51	1,371	143.57
Total	3,856	63.38	19,015	312.56

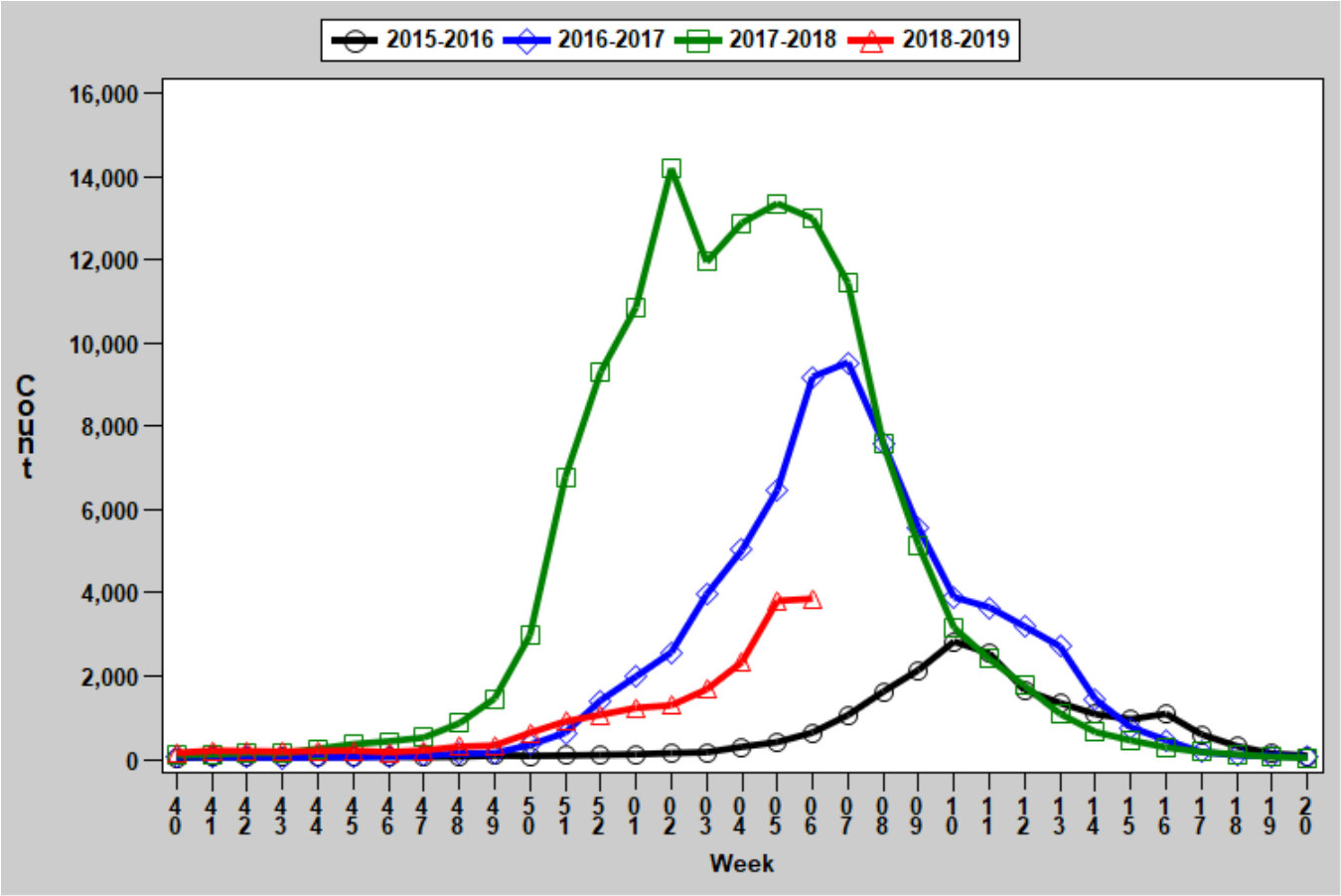
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 6 (February 3, 2019 – February 9, 2019)[*‡]

Region	Week 6 Cases	Week 6 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	243	35.89	1,569	231.76
Eastern	1,457	64.29	6,425	283.52
Northwest	464	29.05	4,309	269.73
Southeast	583	123.60	2,822	598.26
Southwest	1,109	103.52	3,890	363.11
Total	3,856	63.38	19,015	312.56

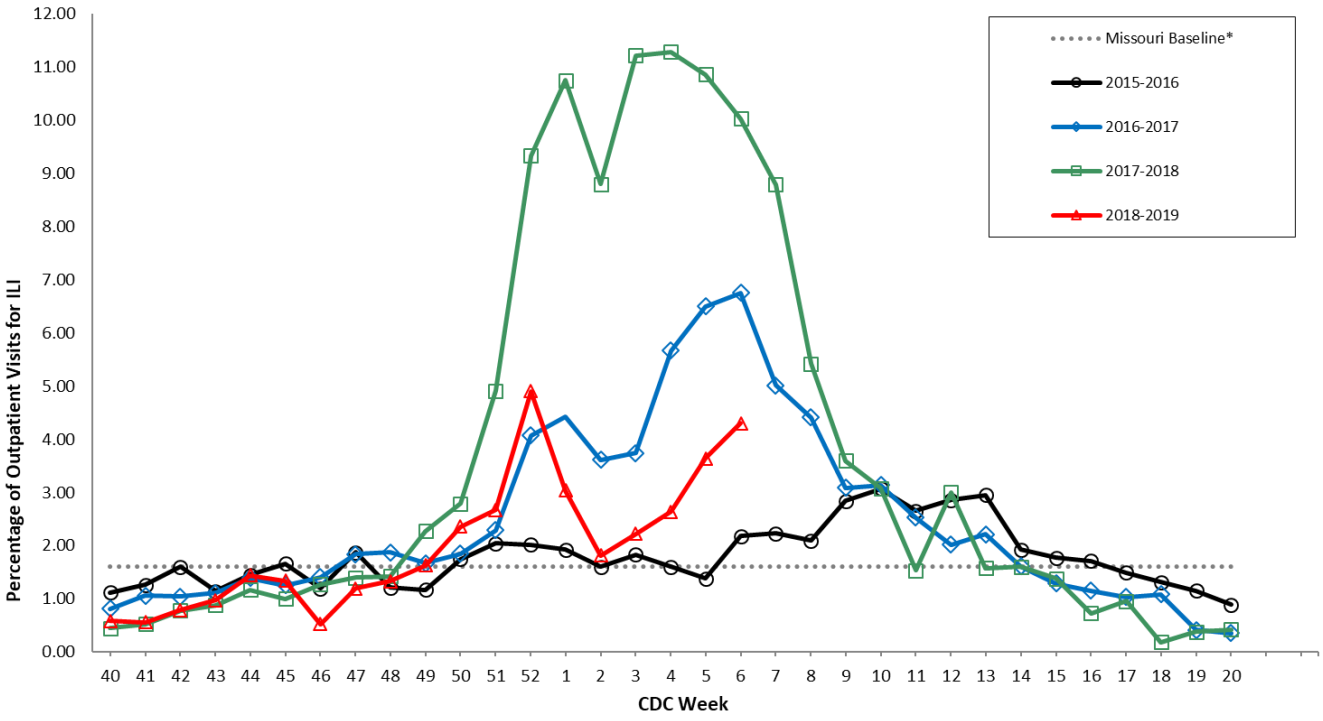
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

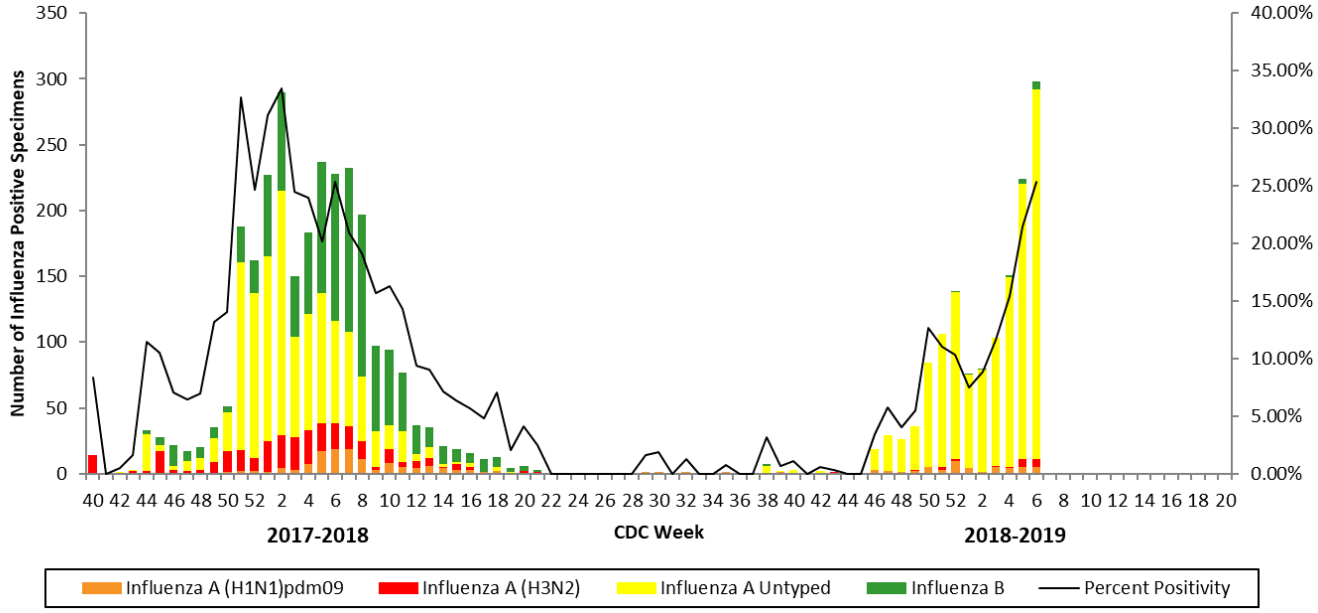
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

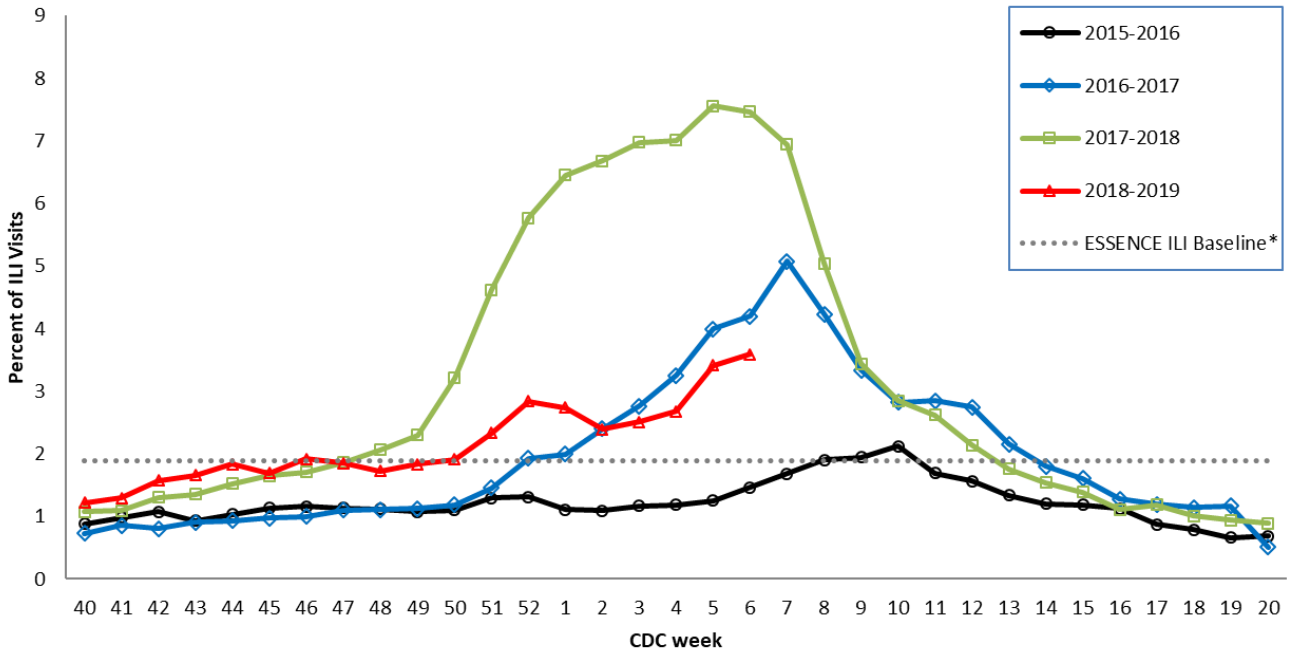
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

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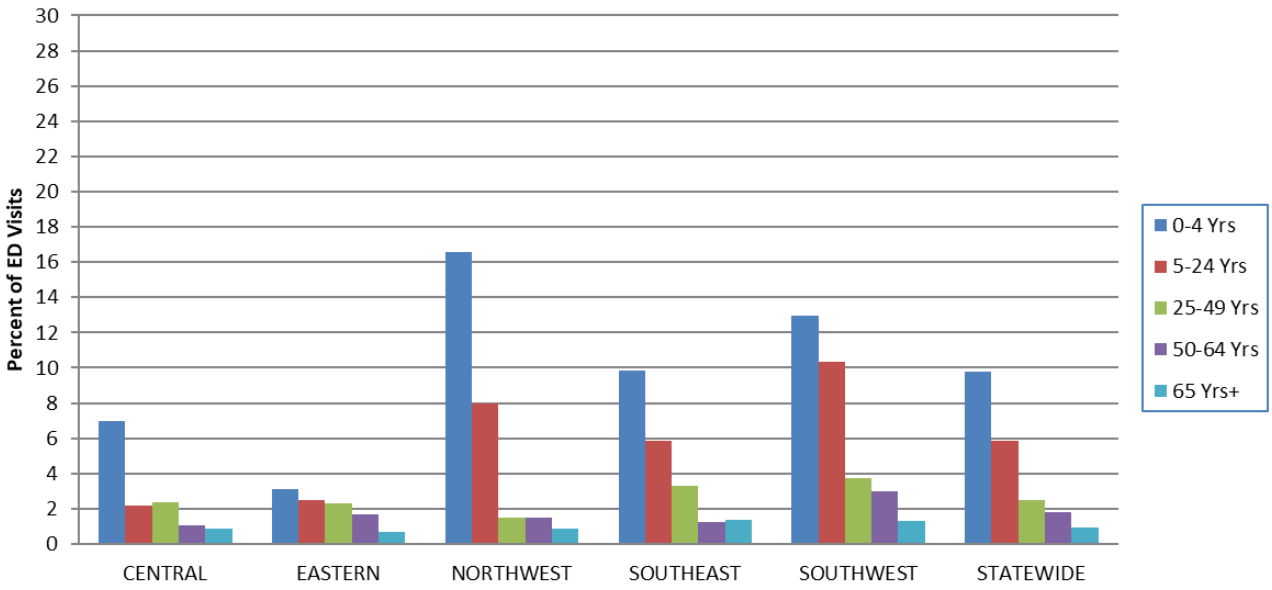

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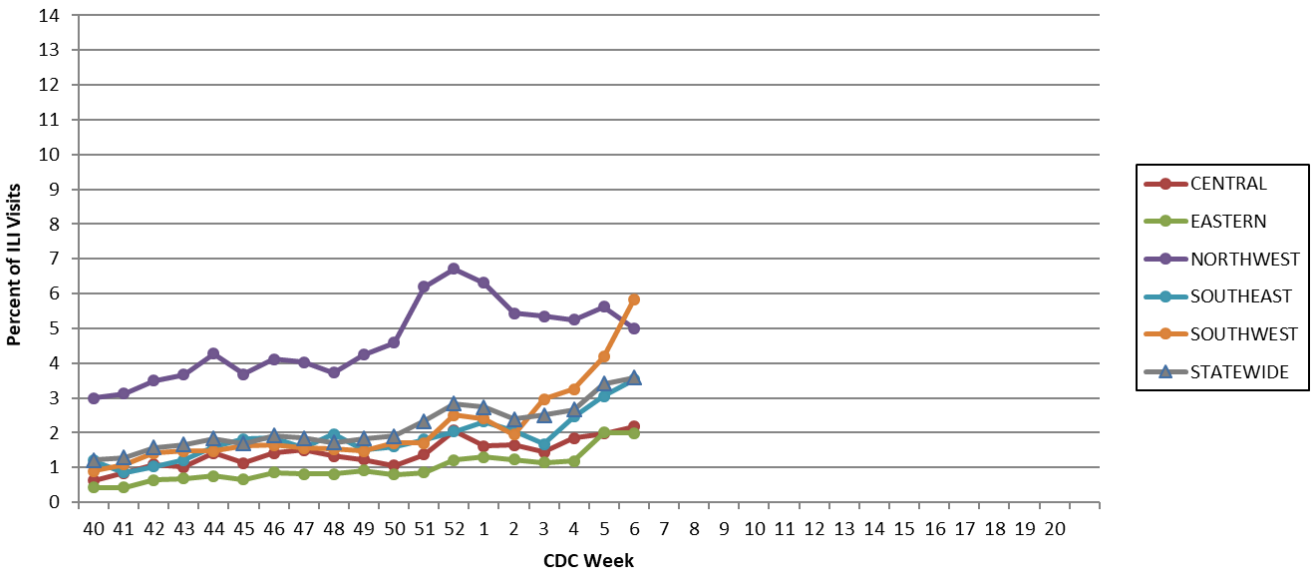
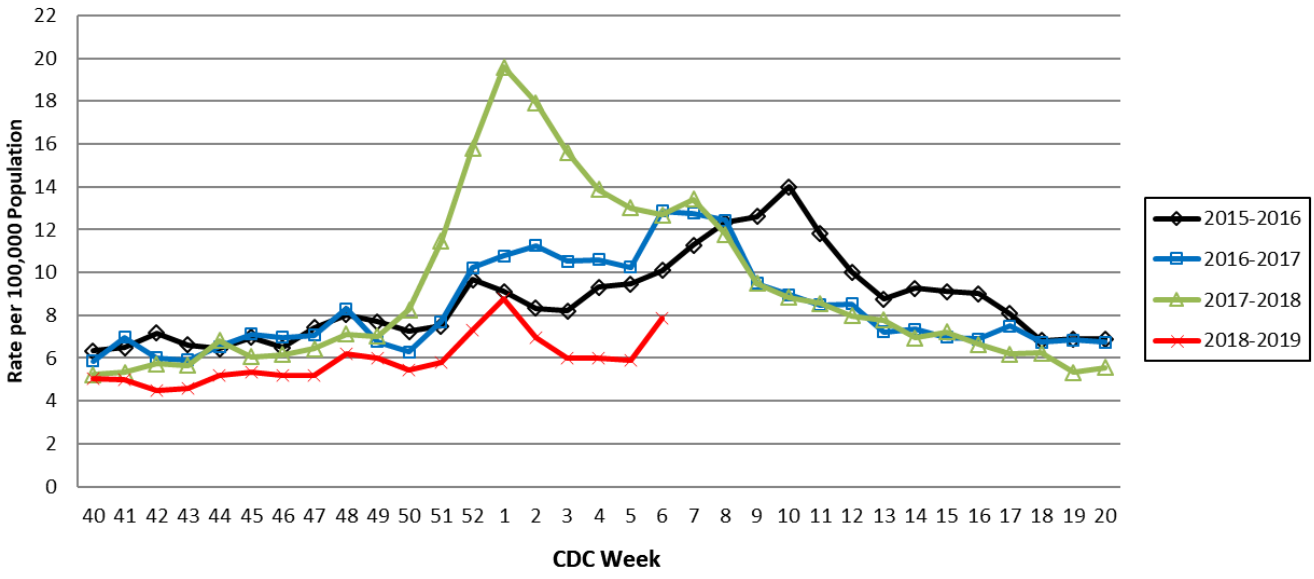


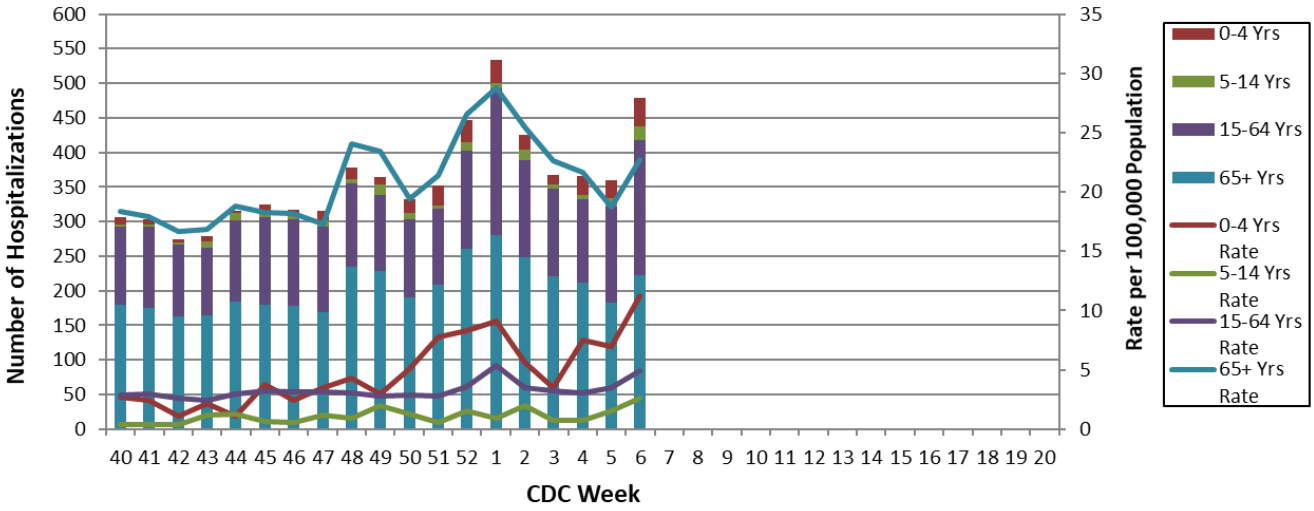
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 6, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 7: February 10, 2019 – February 16, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 7, a total of 3,986 laboratory-positive[3] influenza cases (3,812 influenza A, 163 influenza B, and 11 untyped) were reported. A season-to-date total of 24,694 laboratory-positive influenza cases have been reported in Missouri as of Week 7. The influenza type for reported season-to-date cases includes 90.3% influenza A, 9.1% influenza B and 0.6% untyped. Eight laboratory-positive cases of influenza A (6 H1N1 and 2 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 7. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 7 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.37% (Figure 5) and 3.58% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 14 influenza-associated deaths have been reported in Missouri as of Week 7.[5] During Week 6, 64 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 998 P&I associated deaths in Missouri.[6]

- A season-to-date total of eight influenza outbreaks and five influenza or ILI-associated school closures have been reported in Missouri as of Week 7.

- Influenza activity in the United States increased during Week 6. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 7**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 7**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 7 (February 10, 2019 – February 16, 2019)*

Influenza Type	Week 5	Week 6	Week 7	2018-2019* Season-to-Date
Influenza A	3,787	4,985	3,812	22,295
Influenza B	231	212	163	2,242
Influenza Unknown Or Untyped	24	25	11	157
Total	4,042	5,222	3,986	24,694

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 7 (February 10, 2019 – February 16, 2019)*‡

Age Group	Week 7 Cases	Week 7 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	708	189.12	4,734	1,264.56
05-24	1,930	120.29	10,573	658.95
25-49	759	39.67	5,124	267.78
50-64	339	27.42	2,541	205.52
65+	250	26.18	1,722	180.33
Total	3,986	65.52	24,694	405.91

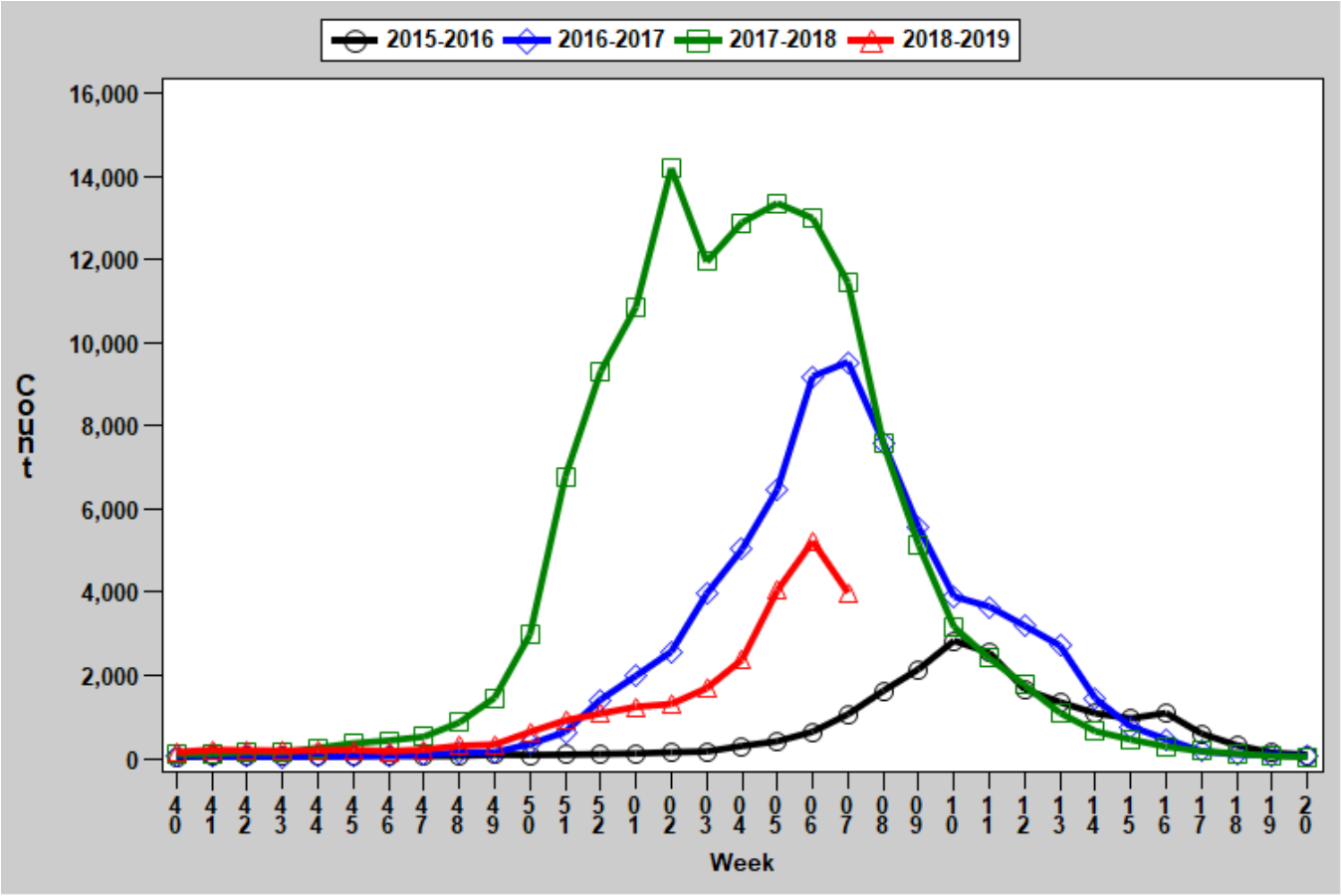
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 7 (February 10, 2019 – February 16, 2019)[*‡]

Region	Week 7 Cases	Week 7 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	348	51.40	2,006	296.31
Eastern	1,130	49.86	7,717	340.53
Northwest	244	15.27	4,773	298.78
Southeast	600	127.20	3,963	840.15
Southwest	1,664	155.33	6,235	582.00
Total	3,986	65.52	24,694	405.91

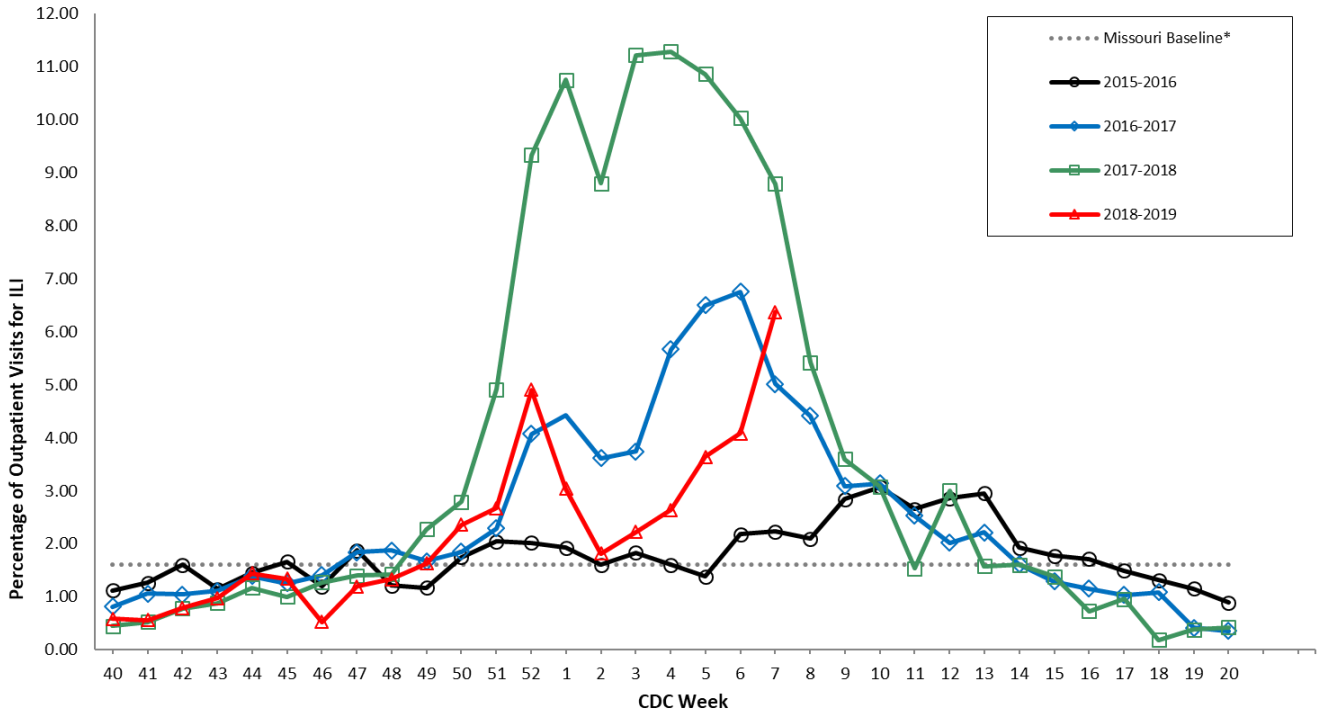
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

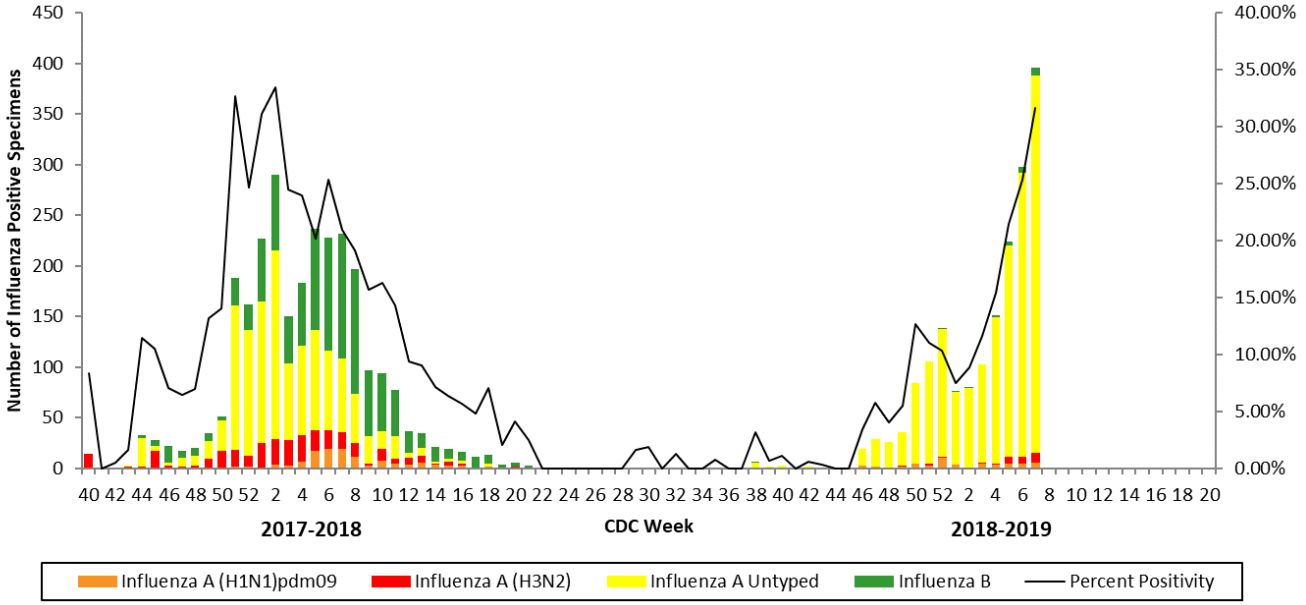
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

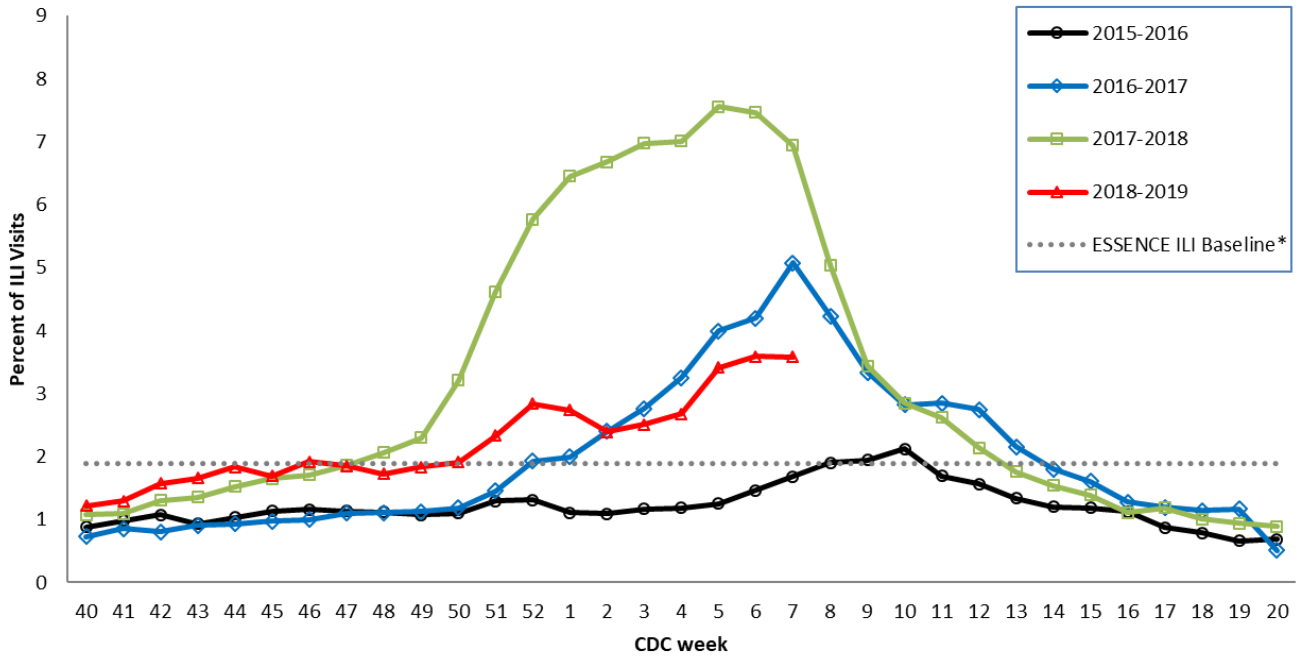
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

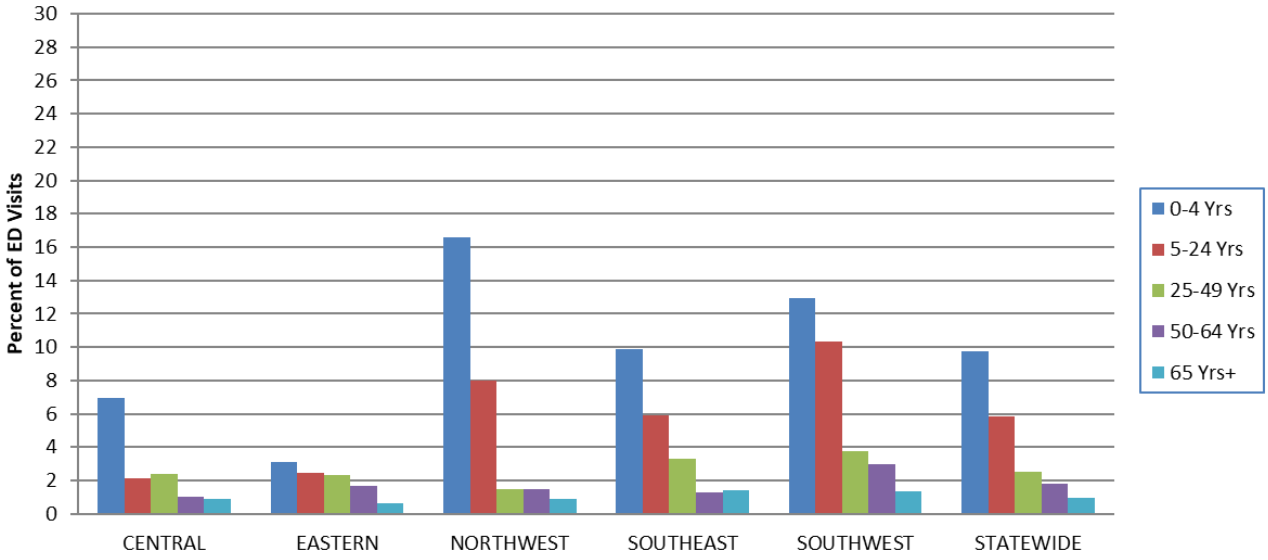
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

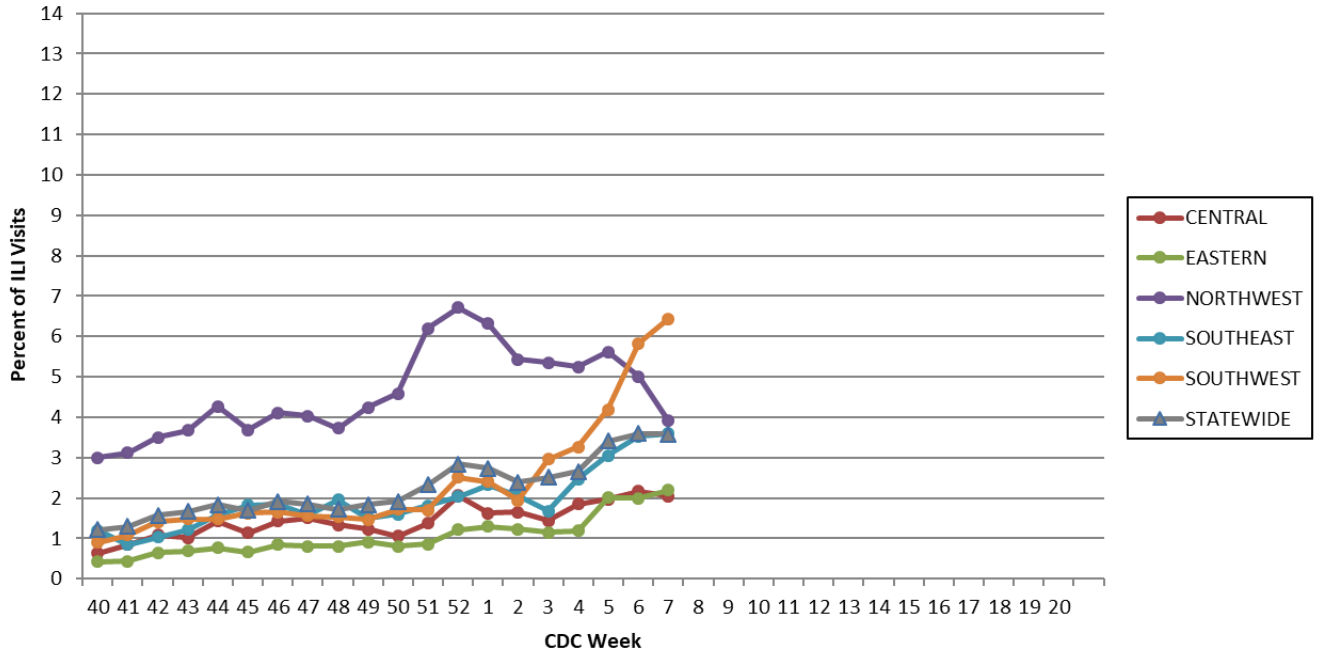
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 7, 2019*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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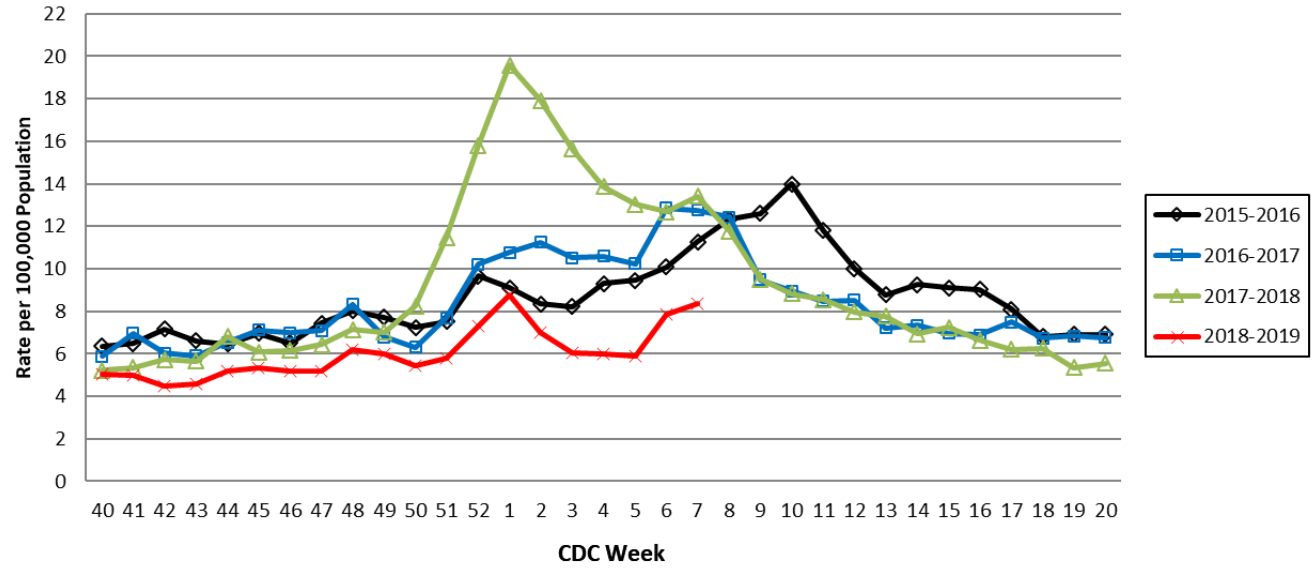
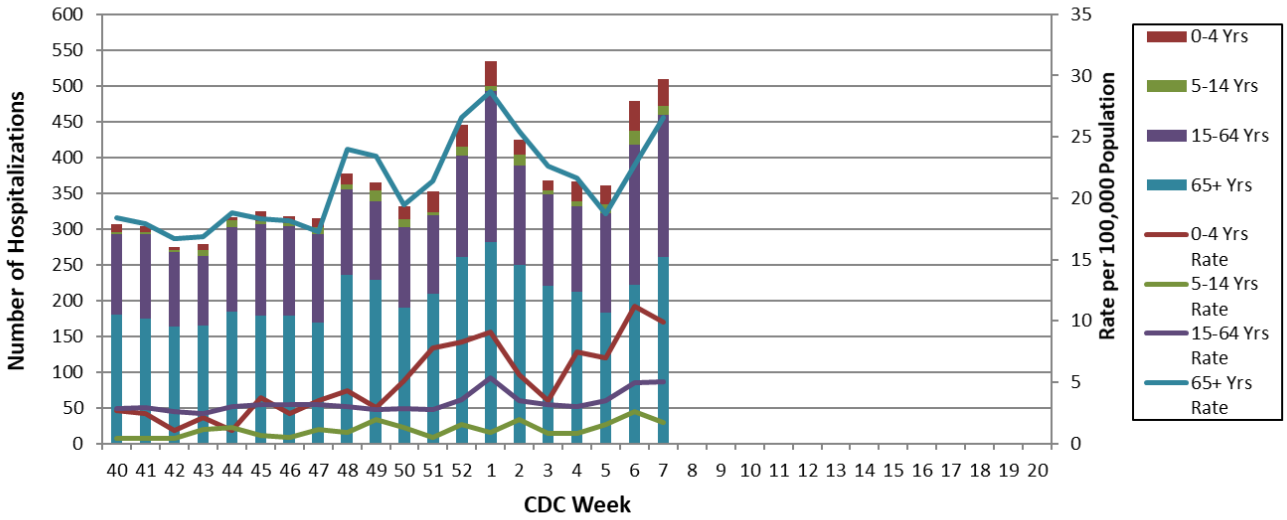
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 7, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

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Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 8: February 17, 2019 – February 23, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 8, a total of 5,237 laboratory-positive[3] influenza cases (4,982 influenza A, 223 influenza B, and 32 untyped) were reported. A season-to-date total of 33,166 laboratory-positive influenza cases have been reported in Missouri as of Week 8. The influenza type for reported season-to-date cases includes 91.4% influenza A, 7.9% influenza B and 0.7% untyped. Ten laboratory-positive cases of influenza A (6 H1N1 and 4 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 8. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 8 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.59% (Figure 5) and 4.03% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 19 influenza-associated deaths have been reported in Missouri as of Week 8.[5] During Week 7, 65 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,063 P&I associated deaths in Missouri.[6]

- A season-to-date total of 10 influenza outbreaks and eight influenza or ILI-associated school closures have been reported in Missouri as of Week 8.

- Influenza activity continued to increase in the United States during Week 7. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 8**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 8**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 8 (February 17, 2019 – February 23, 2019)*

Influenza Type	Week 6	Week 7	Week 8	2018-2019* Season-to-Date
Influenza A	5,483	6,243	4,982	30,301
Influenza B	247	265	223	2,614
Influenza Unknown Or Untyped	43	56	32	251
Total	5,773	6,564	5,237	33,166

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 8 (February 17, 2019 – February 23, 2019)*‡

Age Group	Week 8 Cases	Week 8 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	1,104	294.90	6,398	1,709.05
05-24	2,305	143.66	14,379	896.16
25-49	970	50.69	6,749	352.70
50-64	474	38.34	3,323	268.77
65+	384	40.21	2,317	242.64
Total	5,237	86.08	33,166	545.16

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 8 (February 17, 2019 – February 23, 2019)[*‡]

Region	Week 8 Cases	Week 8 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	520	76.81	2,731	403.40
Eastern	1,537	67.82	10,770	475.25
Northwest	757	47.39	6,081	380.65
Southeast	658	139.50	5,005	1,061.06
Southwest	1,765	164.75	8,579	800.80
Total	5,237	86.08	33,166	545.16

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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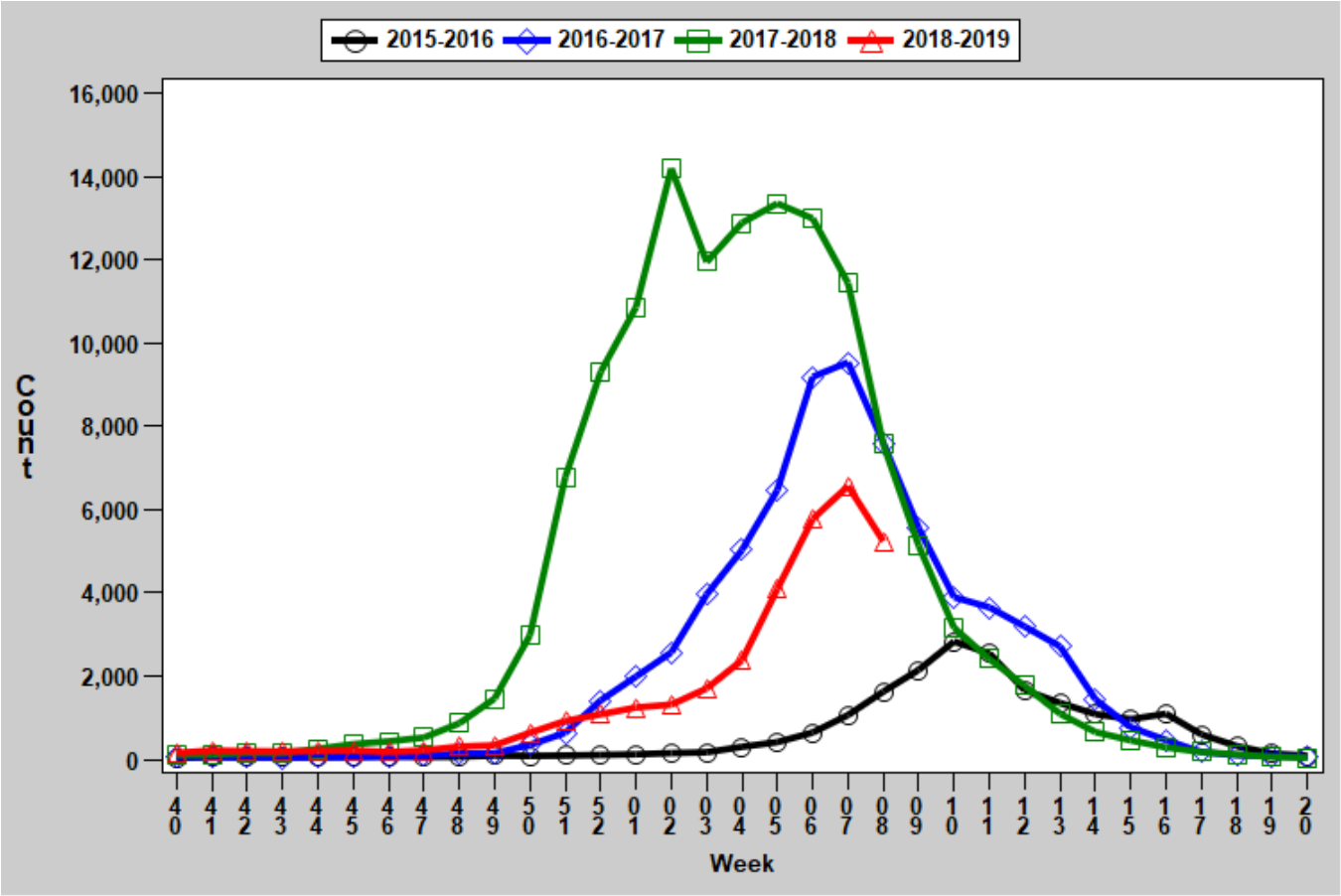

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†

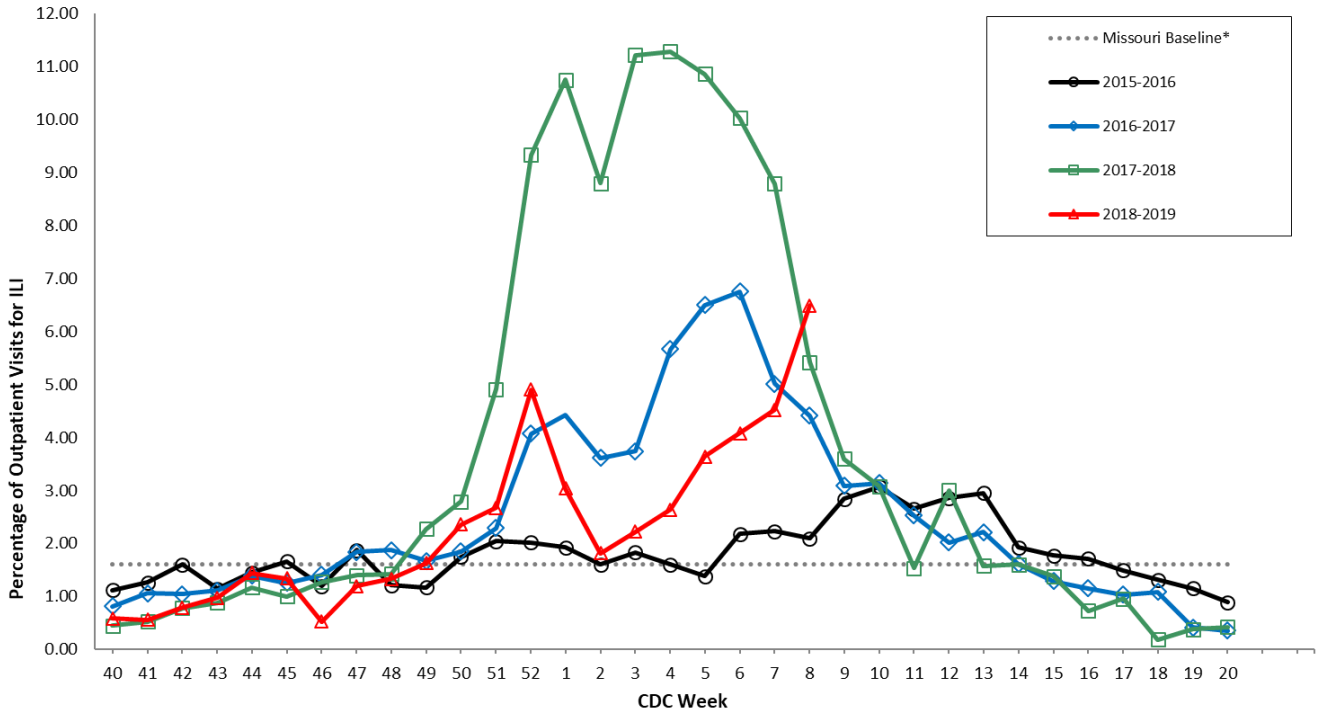

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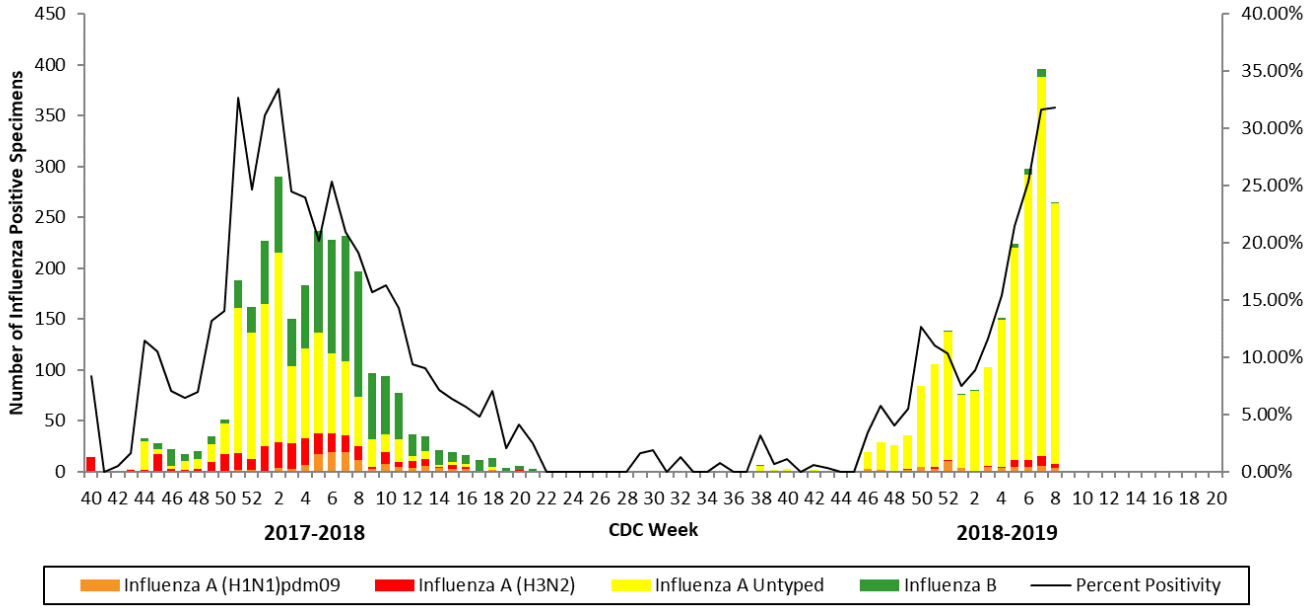
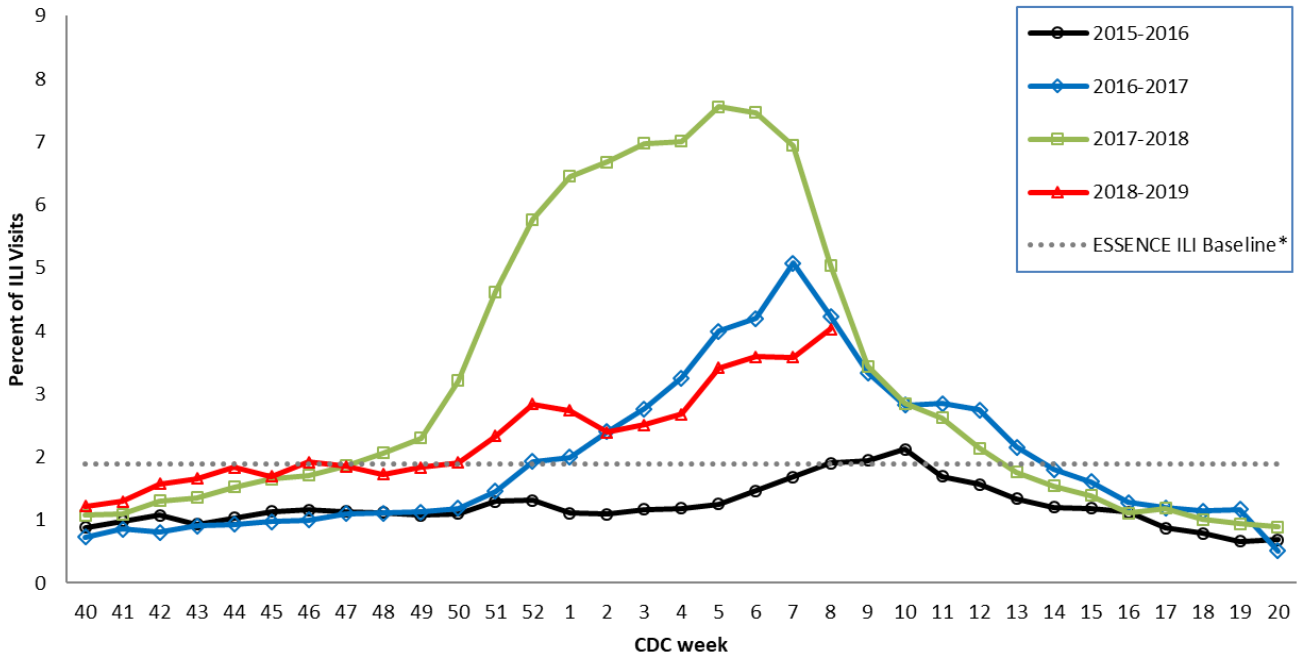
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

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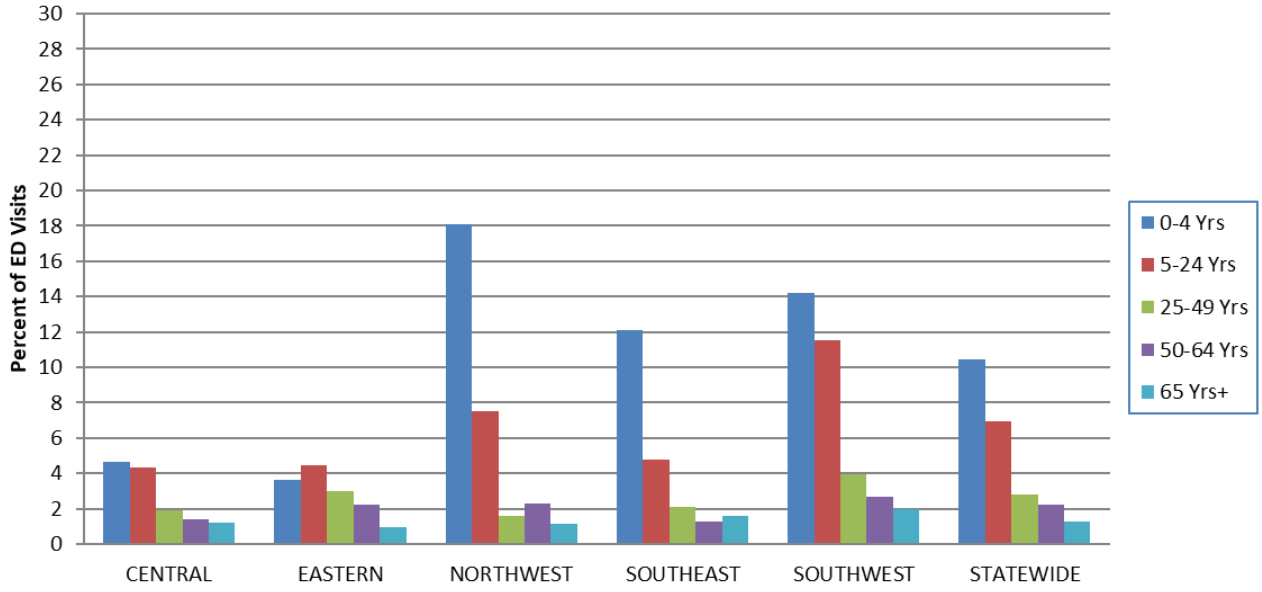

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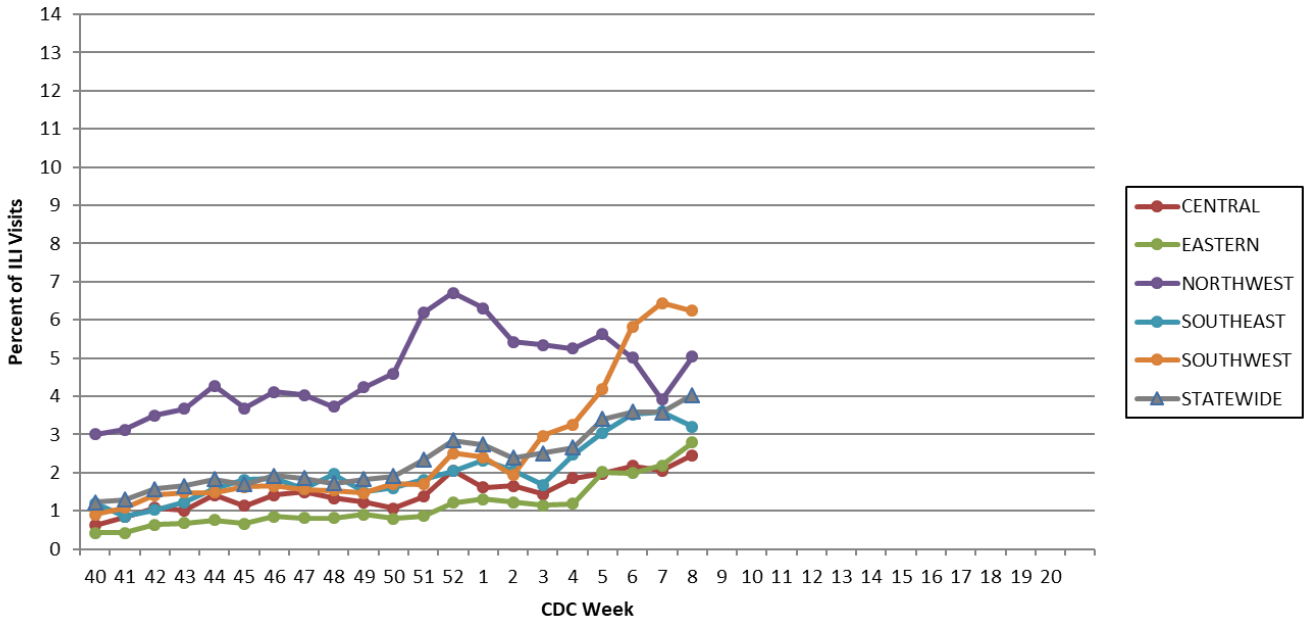

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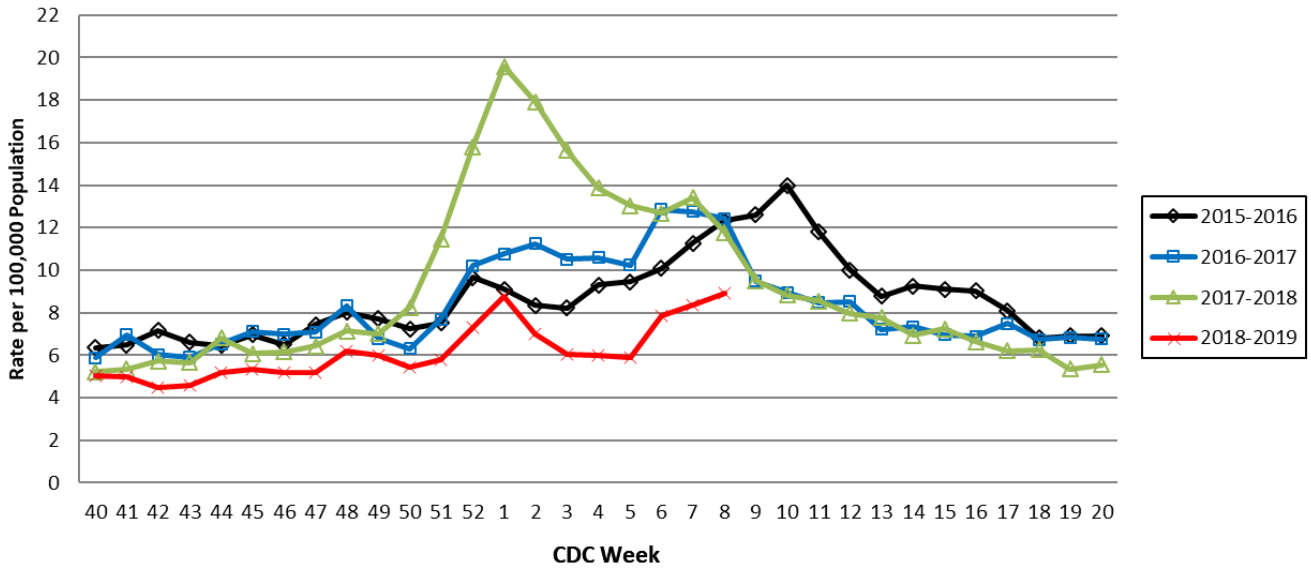
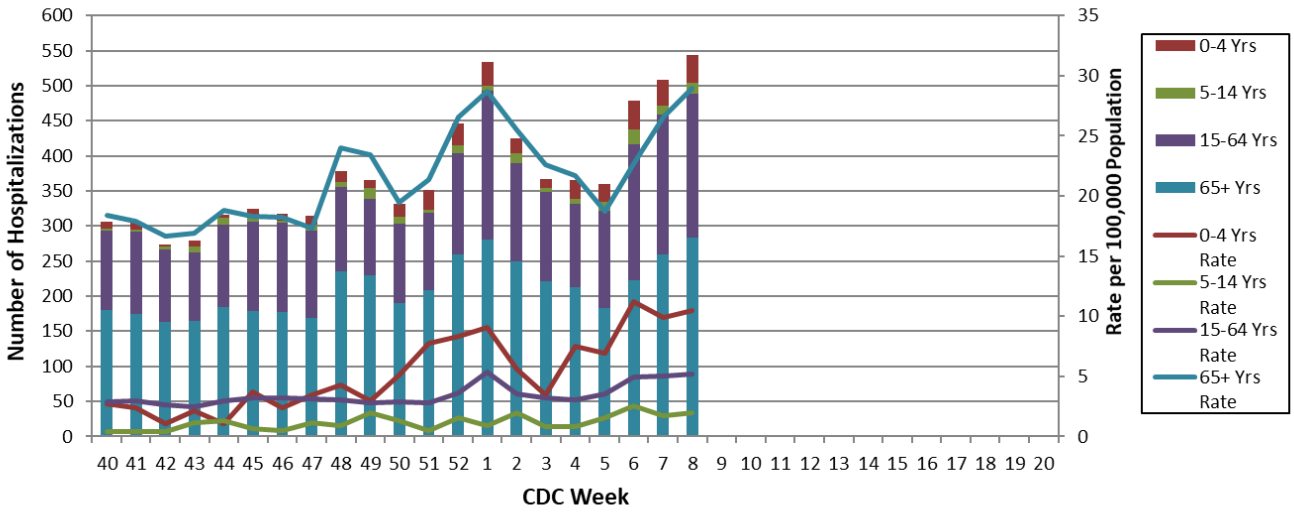


Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 8, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 9: February 24, 2019 – March 4, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 9, a total of 5,173 laboratory-positive[3] influenza cases (4,922 influenza A, 236 influenza B, and 15 untyped) were reported. A season-to-date total of 40,327 laboratory-positive influenza cases have been reported in Missouri as of Week 9. The influenza type for reported season-to-date cases includes 92% influenza A, 7.3% influenza B and 0.7% untyped. Two laboratory-positive cases of influenza A (1 H1N1 and 1 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 9. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 9 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 5.43% (Figure 5) and 4.05% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 24 influenza-associated deaths have been reported in Missouri as of Week 9.[5] During Week 8, 78 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,141 P&I associated deaths in Missouri.[6]

- A season-to-date total of 11 influenza outbreaks and 10 influenza or ILI-associated school closures have been reported in Missouri as of Week 9.

- Influenza activity remained elevated in the United States during Week 9. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 9**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 9**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 9 (February 24, 2019 – March 2, 2019)*

Influenza Type	Week 7	Week 9	Week 9	2018-2019* Season-to-Date
Influenza A	6,591	6,442	4,922	37,111
Influenza B	278	304	236	2,947
Influenza Unknown Or Untyped	57	35	15	269
Total	6,926	6,781	5,173	40,327

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 9 (February 24, 2019 – March 2, 2019)*‡

Age Group	Week 9 Cases	Week 9 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	931	248.69	7,722	2,062.72
05-24	2,324	144.84	17,583	1,095.85
25-49	984	51.42	8,123	424.51
50-64	500	40.44	4,022	325.31
65+	434	45.45	2,877	301.28
Total	5,173	85.03	40,327	662.87

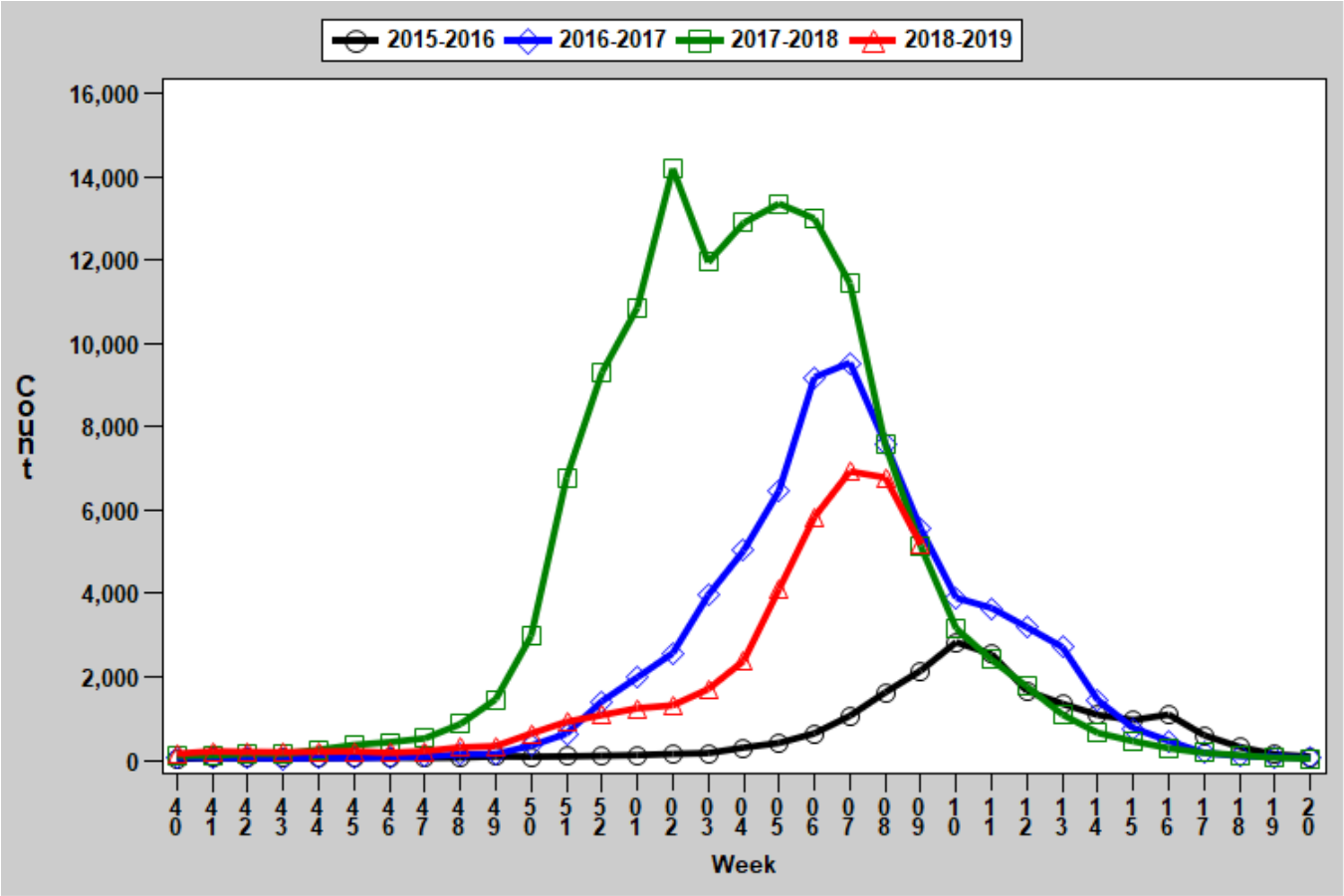
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 9 (February 24, 2019 – March 2, 2019)[*‡]

Region	Week 9 Cases	Week 9 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	716	105.76	3,604	532.35
Eastern	1,628	71.84	13,312	587.43
Northwest	640	40.06	6,862	429.54
Southeast	703	149.04	6,088	1,290.65
Southwest	1,486	138.71	10,461	976.48
Total	5,173	85.03	40,327	662.87

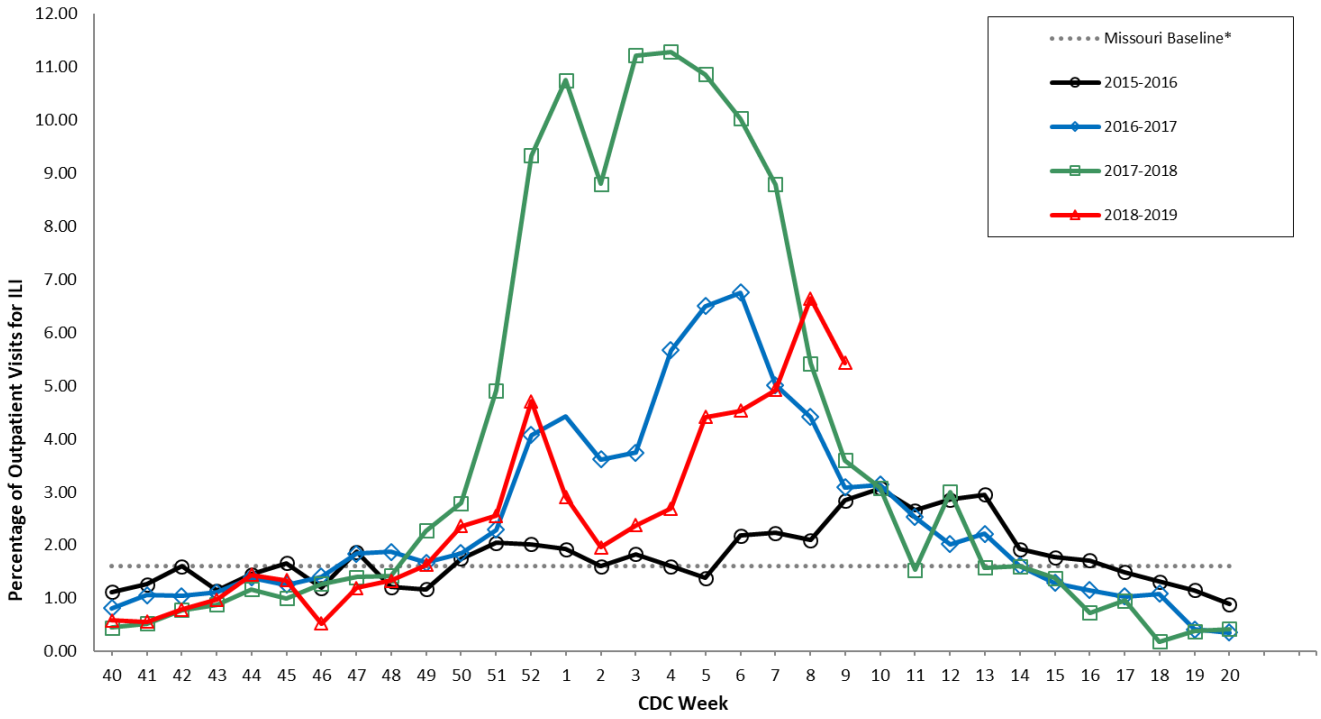
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

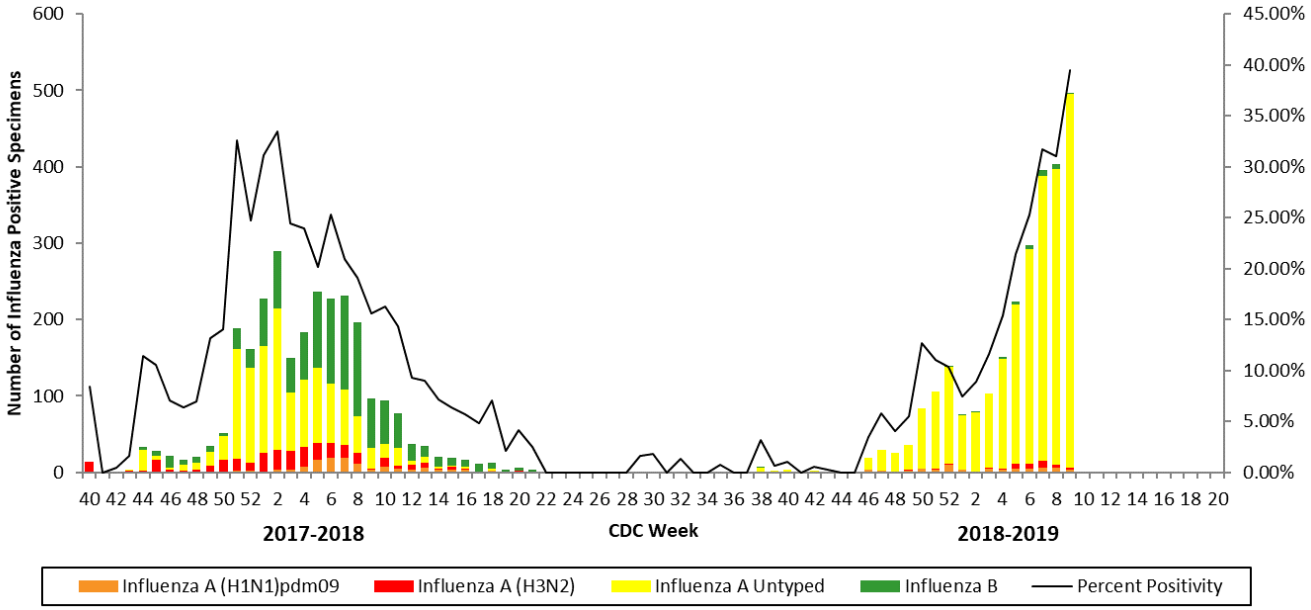
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

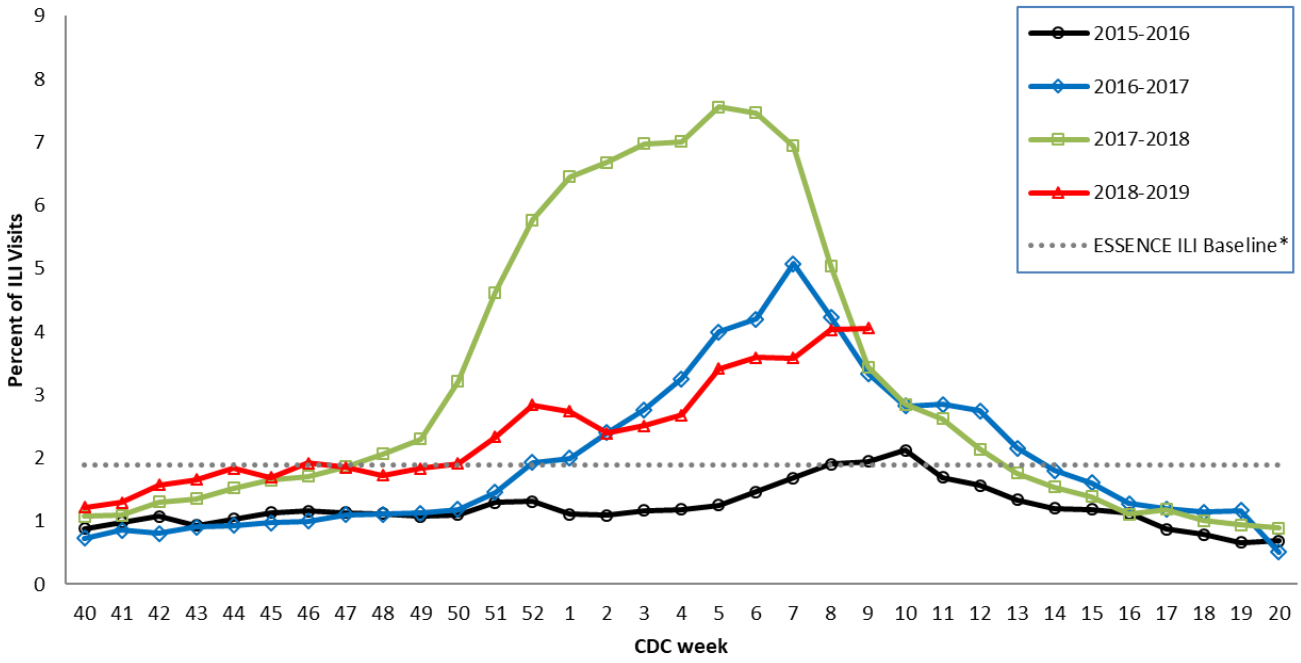
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

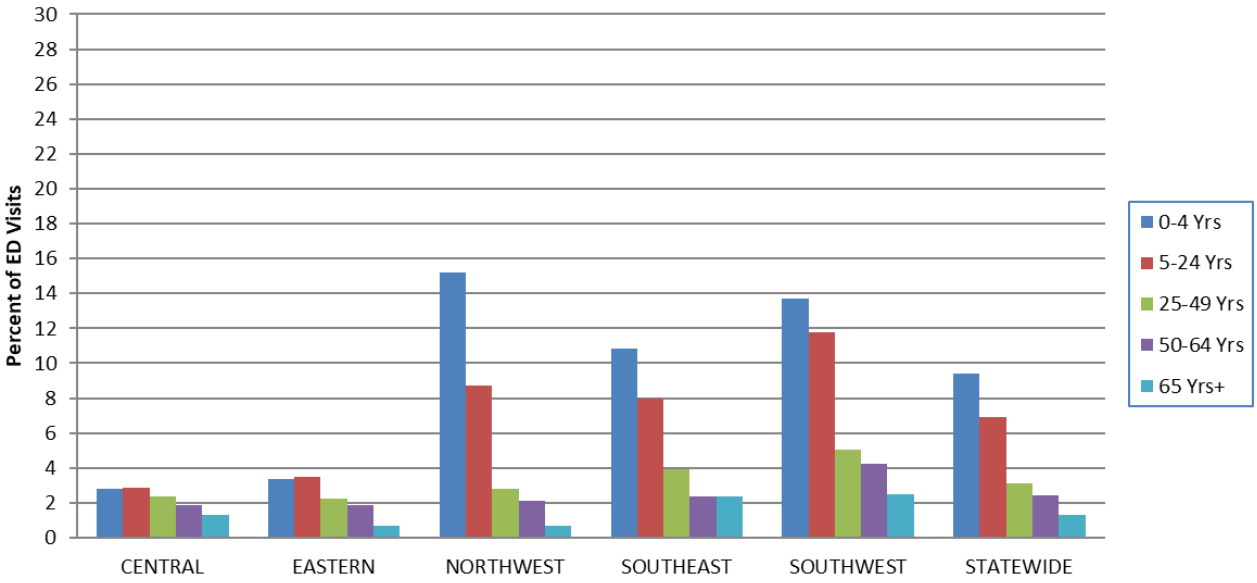
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

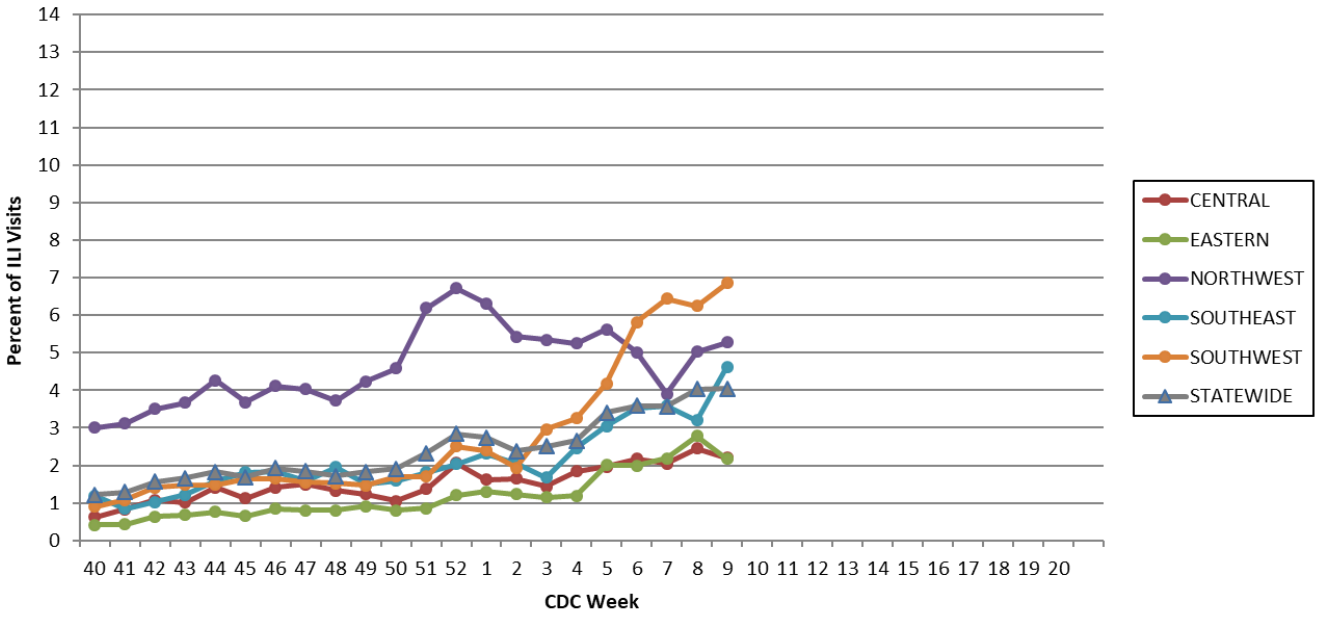
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 9, 2019*



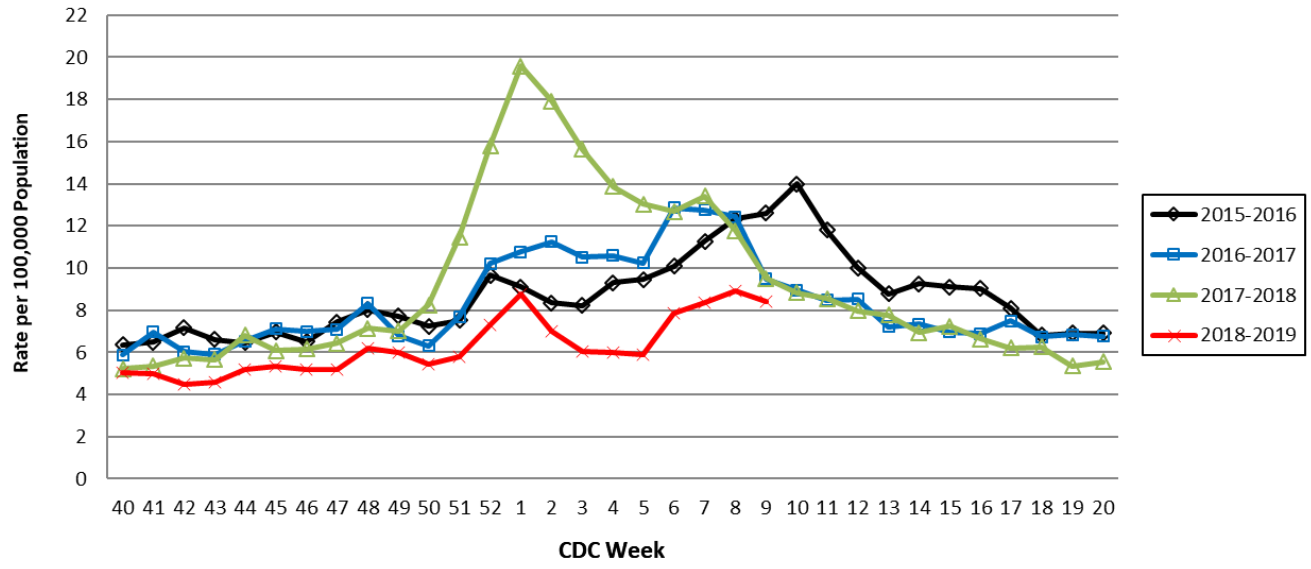
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



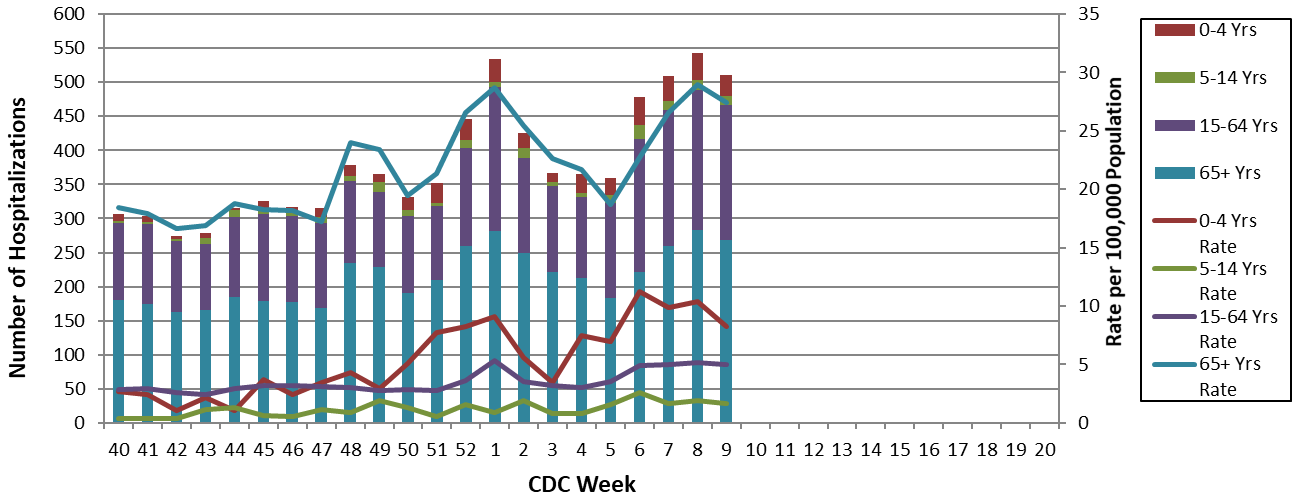
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 8, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 10: March 3, 2019 – March 9, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 10, a total of 5,508 laboratory-positive[3] influenza cases (5,244 influenza A, 238 influenza B, and 26 untyped) were reported. A season-to-date total of 48,956 laboratory-positive influenza cases have been reported in Missouri as of Week 10. The influenza type for reported season-to-date cases includes 92% influenza A, 7.3% influenza B and 0.7% untyped. Six laboratory-positive cases of influenza A (2 H1N1 and 4 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 10. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 10 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 8.64% (Figure 5) and 4.17% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 29 influenza-associated deaths have been reported in Missouri as of Week 10.[5] During Week 9, 60 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,201 P&I associated deaths in Missouri.[6]

- A season-to-date total of 15 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 10.

- Influenza activity remained elevated in the United States during Week 9. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 10**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 10**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 10 (March 3, 2019 – March 9, 2019)*

Influenza Type	Week 8	Week 9	Week 10	2018-2019* Season-to-Date
Influenza A	7,181	6,914	5,244	45,283
Influenza B	342	333	238	3,339
Influenza Unknown Or Untyped	44	40	26	334
Total	7,567	7,287	5,508	48,956

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 10 (March 3, 2019 – March 9, 2019)*‡

Age Group	Week 10 Cases	Week 10 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	1,013	270.60	9,397	2,510.15
05-24	2,532	157.80	21,432	1,335.73
25-49	961	50.22	9,710	507.45
50-64	551	44.57	4,880	394.70
65+	451	47.23	3,537	370.40
Total	5,508	90.54	48,956	804.71

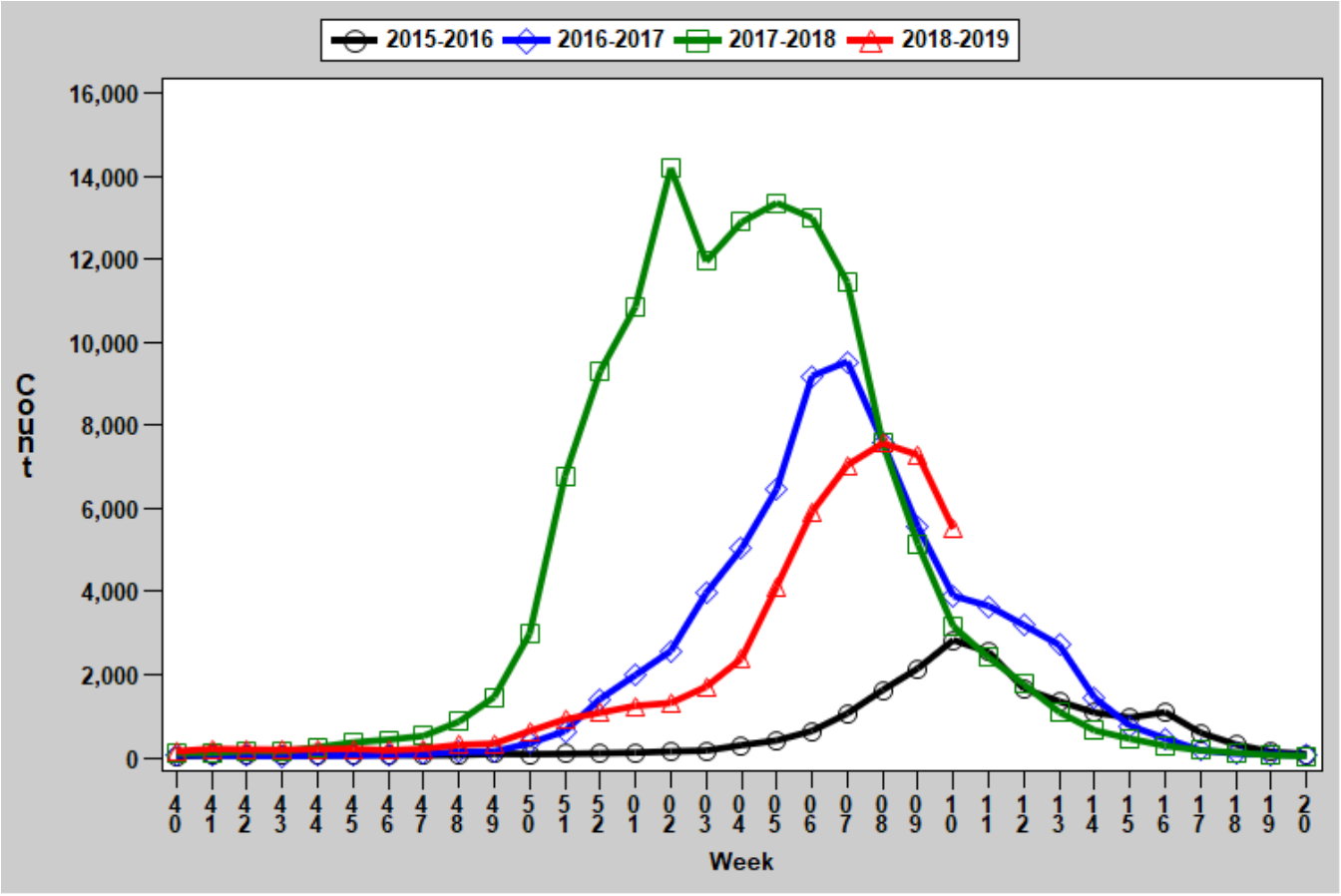
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 10 (March 3, 2019 – March 9, 2019)[*‡]

Region	Week 10 Cases	Week 10 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	1,003	148.15	4,722	697.49
Eastern	1,250	55.16	16,156	712.93
Northwest	1,025	64.16	8,117	508.10
Southeast	787	166.84	7,404	1,569.65
Southwest	1,443	134.70	12,557	1,172.13
Total	5,508	90.54	48,956	804.71

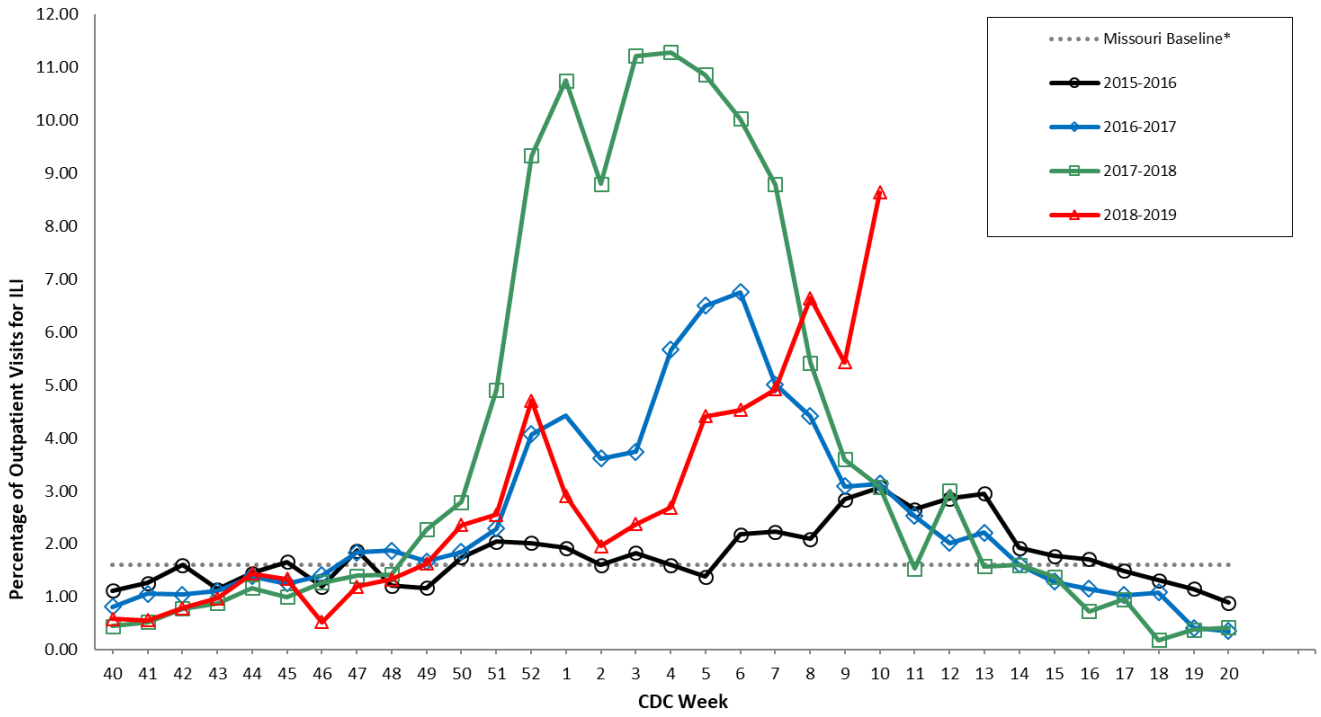
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

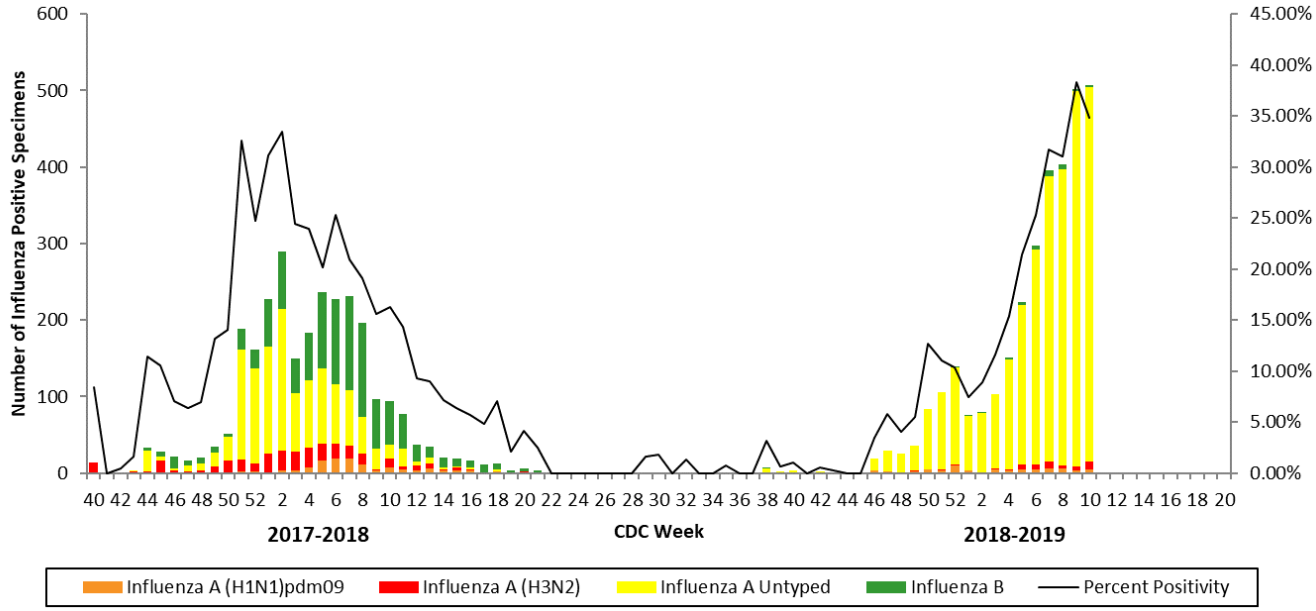
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

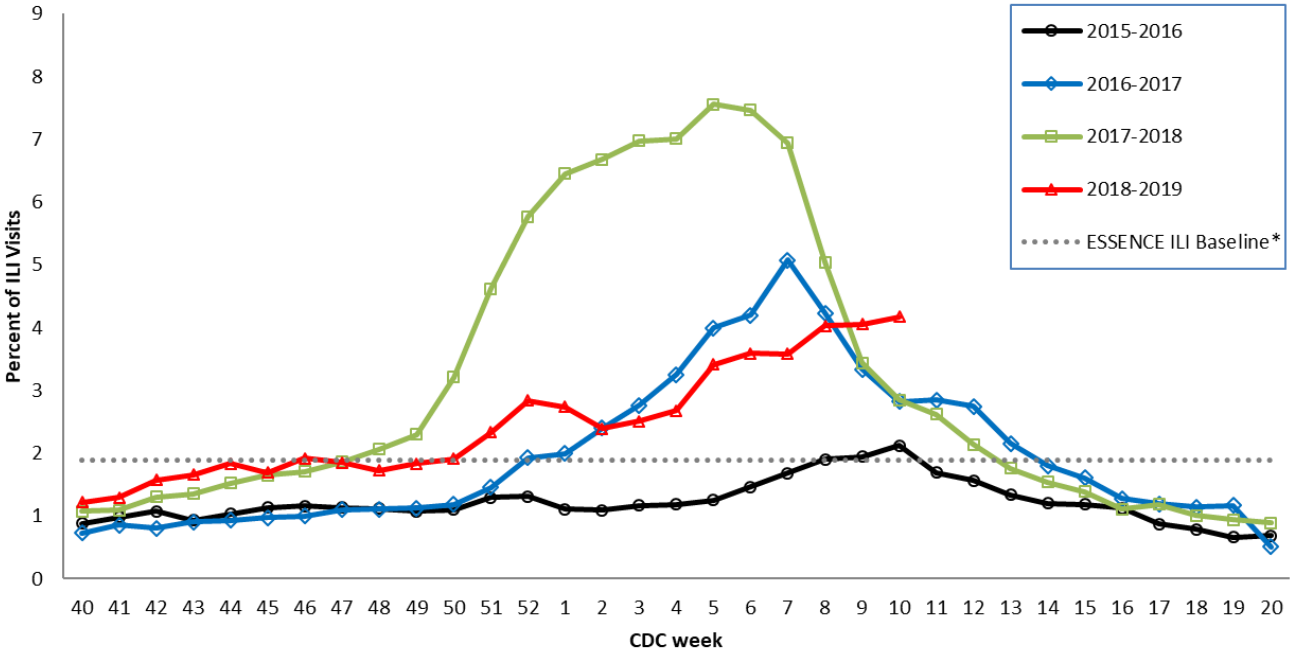
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

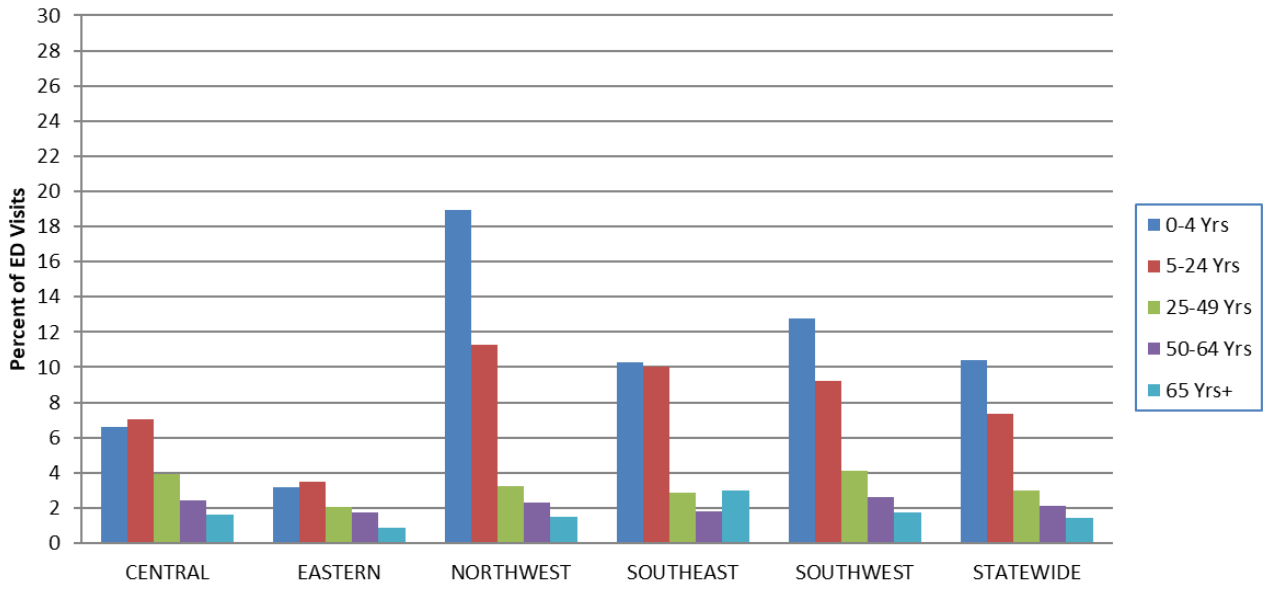
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 10, 2019*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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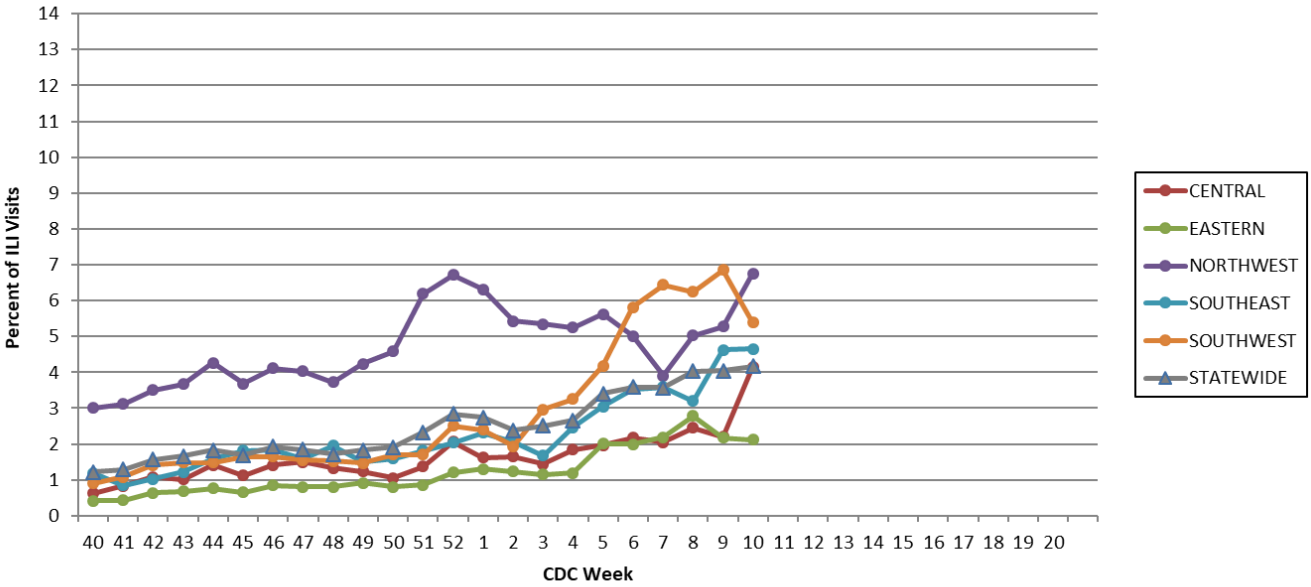
Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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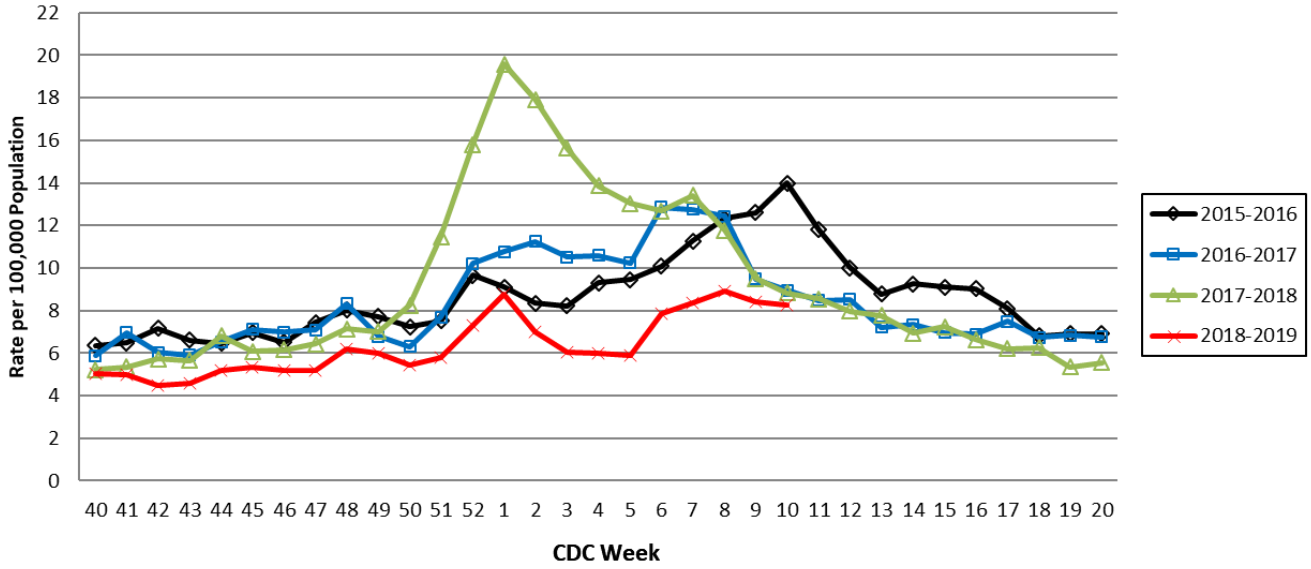
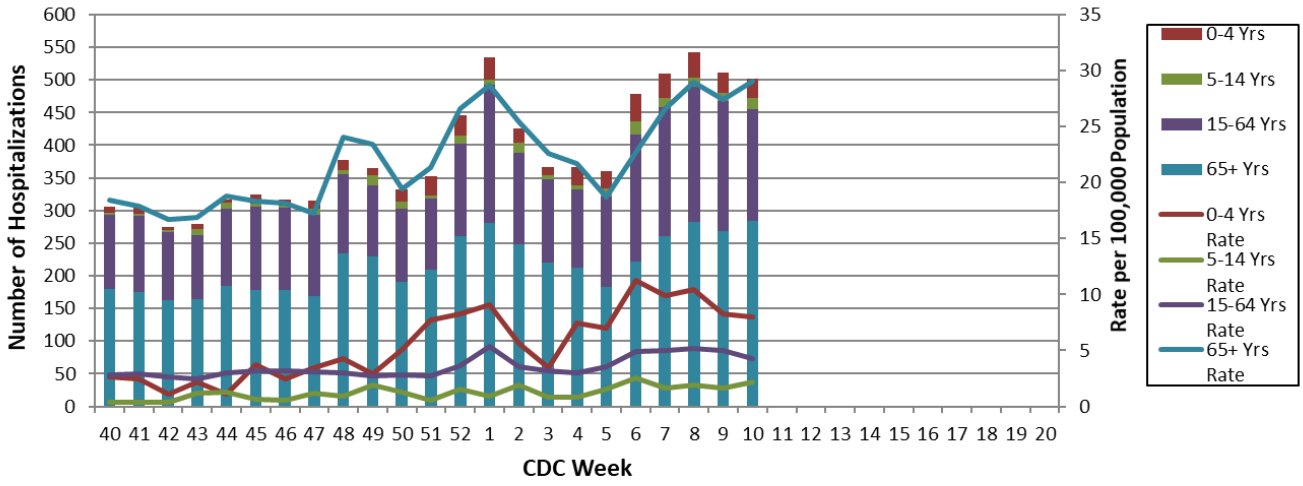
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 10, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 11: March 10, 2019 – March 16, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 11, a total of 4,976 laboratory-positive[3] influenza cases (4,728 influenza A, 221 influenza B, and 27 untyped) were reported. A season-to-date total of 56,373 laboratory-positive influenza cases have been reported in Missouri as of Week 11. The influenza type for reported season-to-date cases includes 92.7% influenza A, 6.5% influenza B and 0.8% untyped. Four laboratory-positive cases of influenza A (3 H1N1 and 1 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 11. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) increased during Week 11 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 11.58% (Figure 5) and 4.03% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 32 influenza-associated deaths have been reported in Missouri as of Week 11.[5] During Week 10, 61 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,262 P&I associated deaths in Missouri.[6]

- A season-to-date total of 17 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 11.

- Influenza activity decreased slightly in the United States during Week 10. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 11**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 11**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 11 (March 10, 2019 – March 16, 2019)*

Influenza Type	Week 9	Week 10	Week 11	2018-2019* Season-to-Date
Influenza A	7,294	6,952	4,728	52,270
Influenza B	350	329	221	3,677
Influenza Unknown Or Untyped	62	57	27	426
Total	7,706	7,338	4,976	56,373

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 11 (March 10, 2019 – March 16, 2019)*‡

Age Group	Week 11 Cases	Week 11 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	902	240.94	10,746	2,870.50
05-24	2,196	136.86	24,642	1,535.79
25-49	845	44.16	11,069	578.47
50-64	521	42.14	5,661	457.87
65+	512	53.62	4,255	445.59
Total	4,976	81.79	56,373	926.63

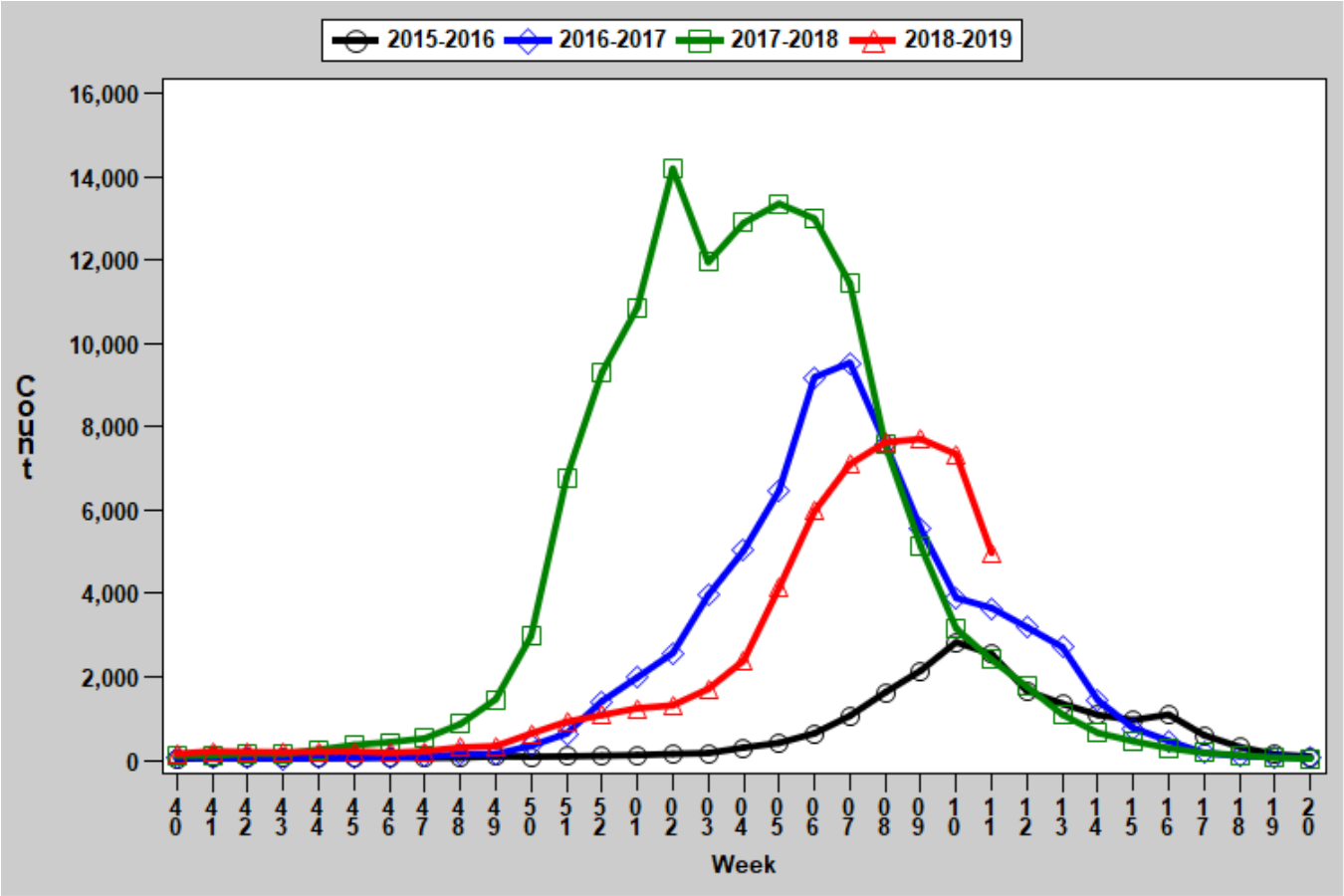
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 11 (March 10, 2019 – March 16, 2019)[*‡]

Region	Week 11 Cases	Week 11 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	875	129.25	5,763	851.26
Eastern	1,030	45.45	17,638	778.32
Northwest	1,290	80.75	10,437	653.32
Southeast	731	154.97	8,317	1,763.20
Southwest	1,050	98.01	14,218	1,327.17
Total	4,976	81.79	56,373	926.63

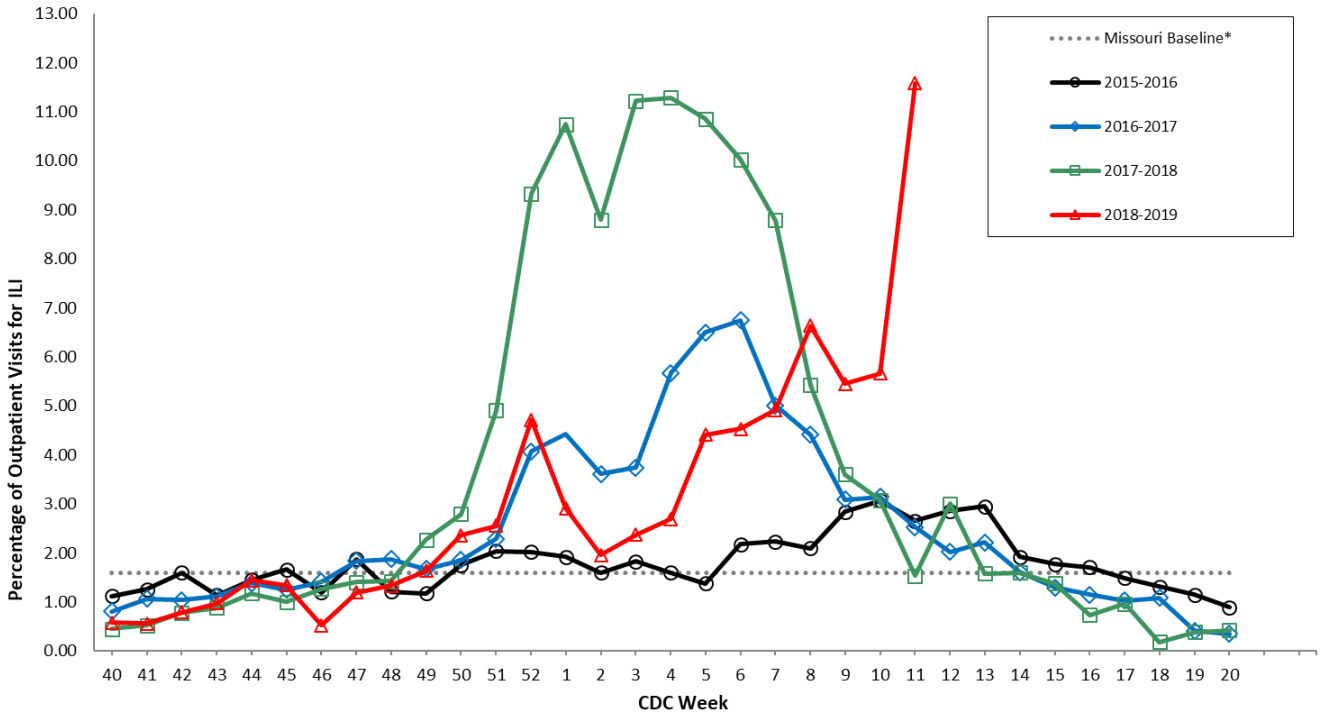
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

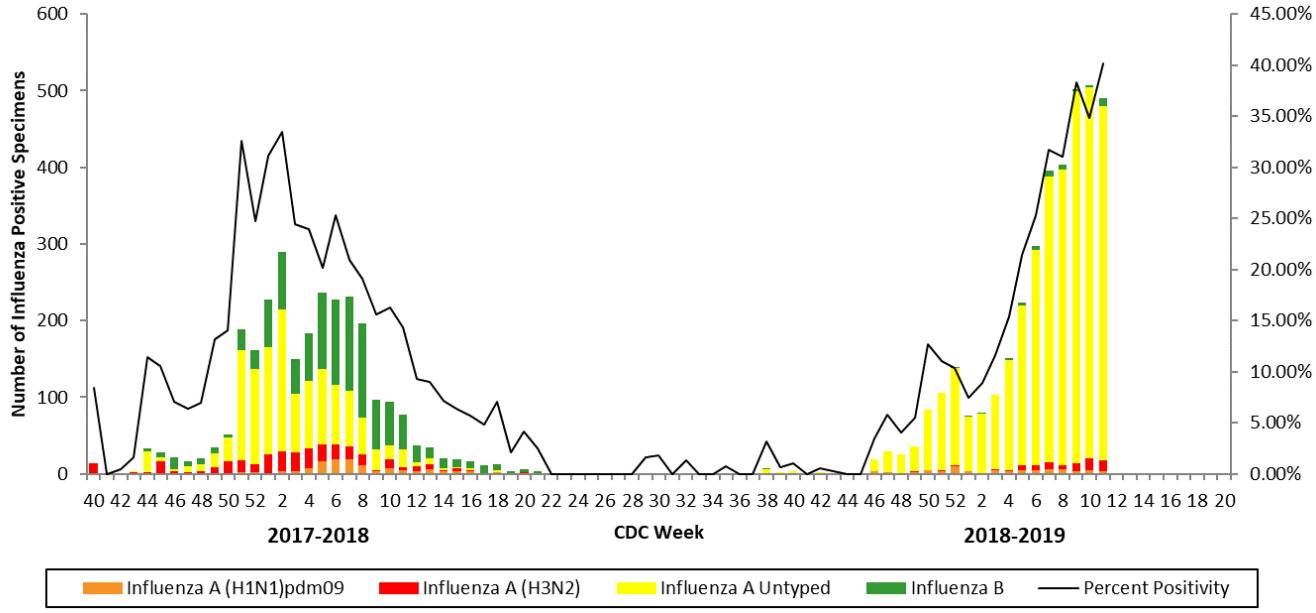
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

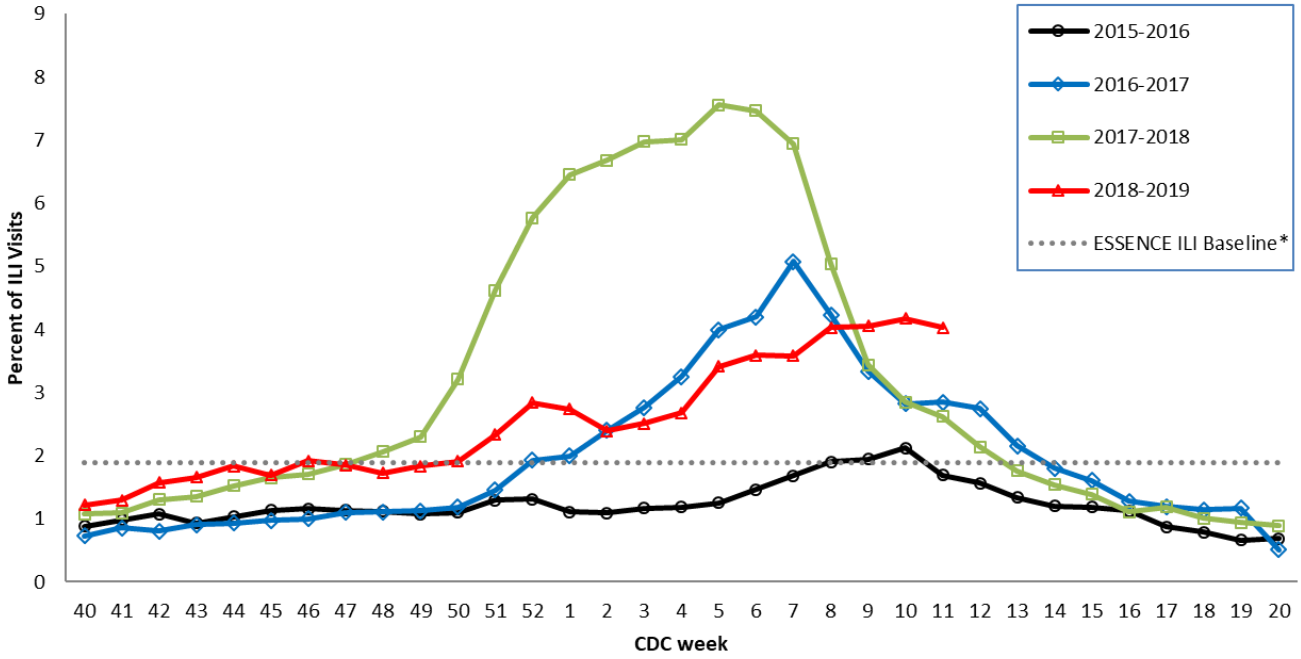
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

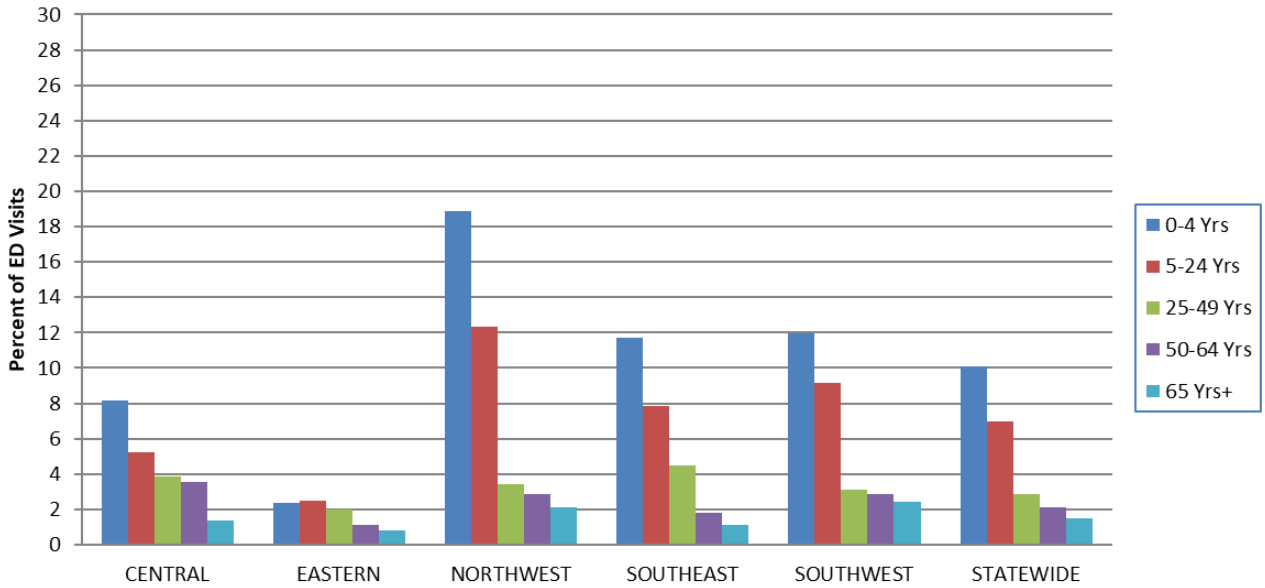
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

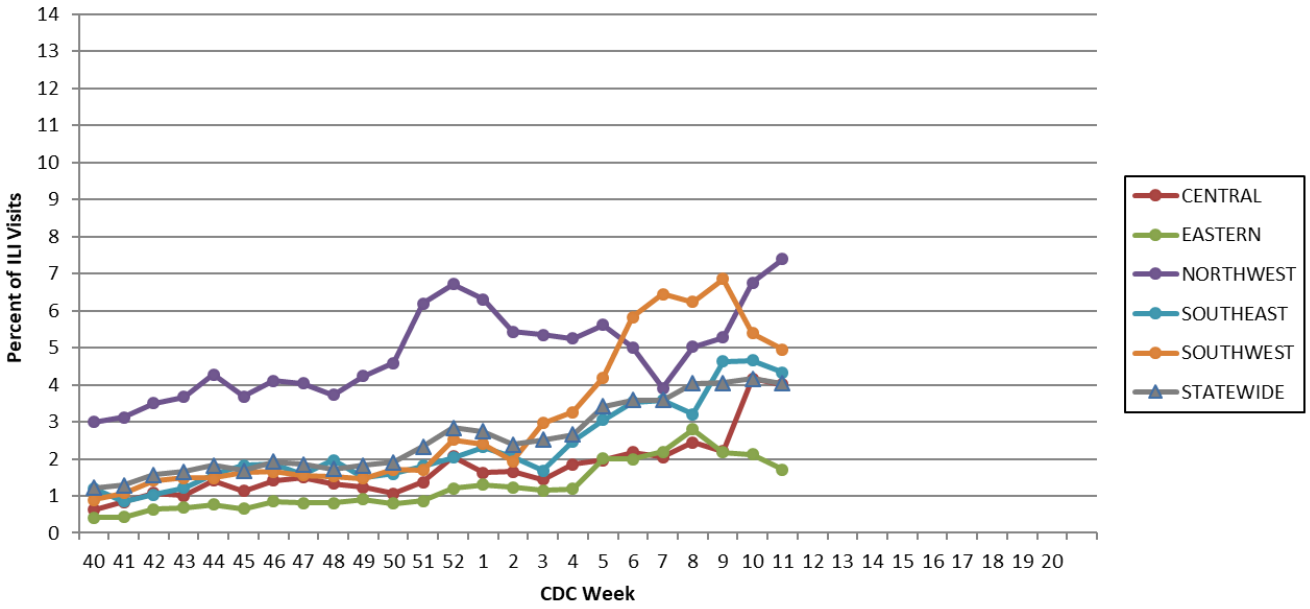
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 11, 2019*



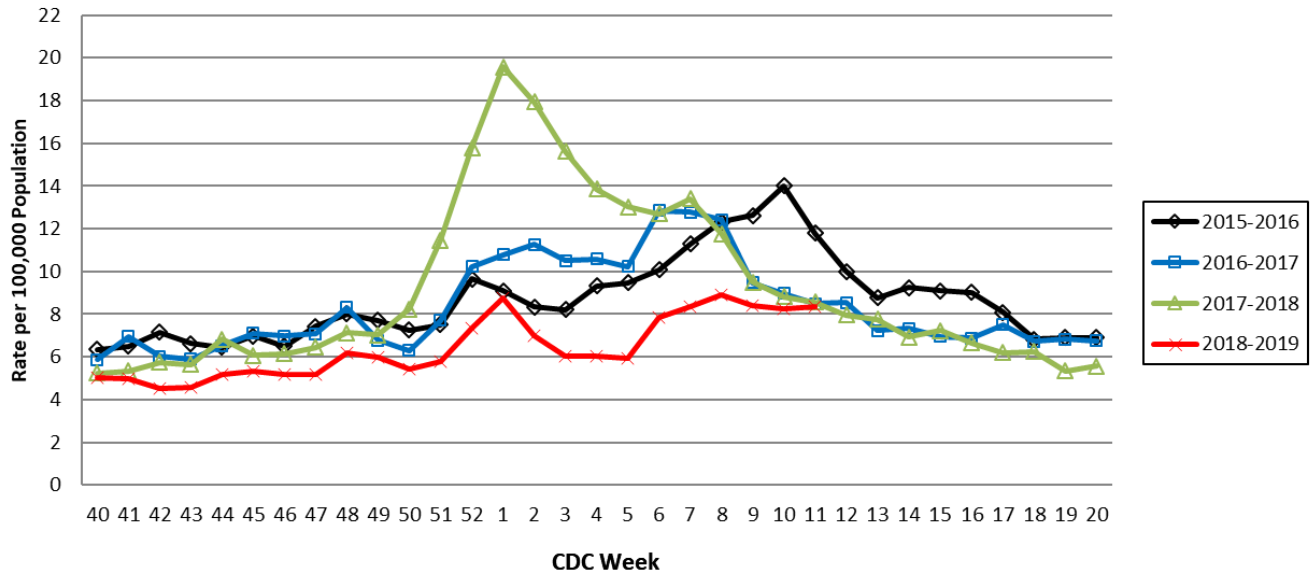
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



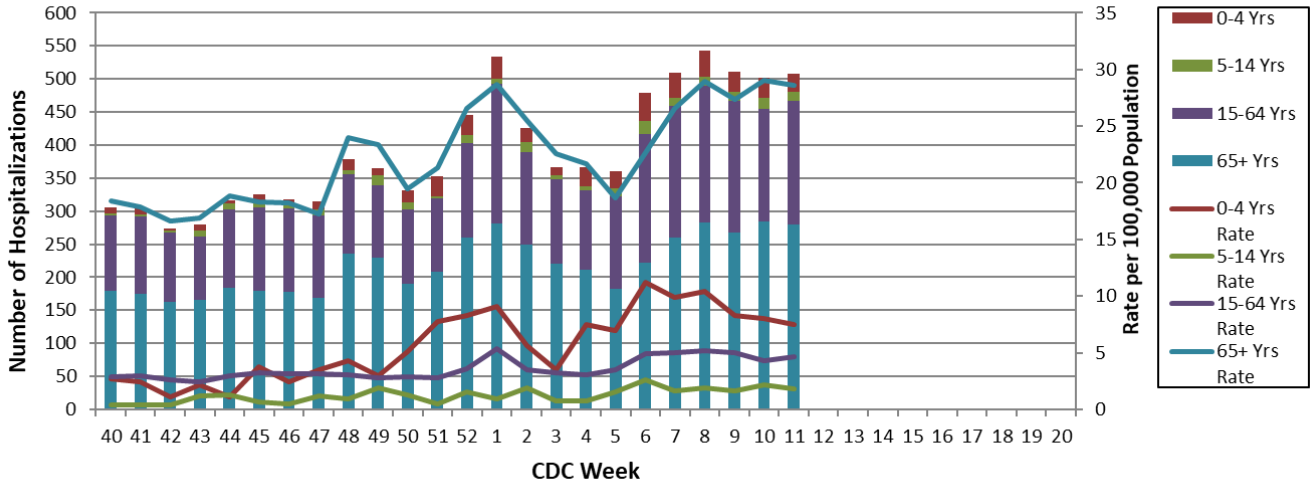
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 11, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 12: March 17, 2019 – March 23, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 12, a total of 4,830 laboratory-positive[3] influenza cases (4,569 influenza A, 249 influenza B, and 12 untyped) were reported. A season-to-date total of 63,828 laboratory-positive influenza cases have been reported in Missouri as of Week 12. The influenza type for reported season-to-date cases includes 92.9% influenza A, 6.4% influenza B and 0.7% untyped. Seven laboratory-positive cases of influenza A (4 H1N1 and 3 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 12. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 12 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 7.13% (Figure 5) and 3.38% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 41 influenza-associated deaths have been reported in Missouri as of Week 12.[5] During Week 11, 76 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,338 P&I associated deaths in Missouri.[6]

- A season-to-date total of 19 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 12.

- Influenza activity remains elevated in the United States during Week 11. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 12**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 12**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 12 (March 17, 2019 – March 23, 2019)*

Influenza Type	Week 10	Week 11	Week 12	2018-2019* Season-to-Date
Influenza A	7,188	6,844	4,569	59,263
Influenza B	347	364	249	4,093
Influenza Unknown Or Untyped	58	60	12	472
Total	7,593	7,268	4,830	63,828

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 12 (March 17, 2019 – March 23, 2019)*‡

Age Group	Week 12 Cases	Week 12 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	874	233.47	12,087	3,228.71
05-24	2,164	134.87	27,945	1,741.65
25-49	796	41.60	12,383	647.14
50-64	459	37.12	6,364	514.73
65+	537	56.23	5,049	528.73
Total	4,830	79.39	63,828	1,049.17

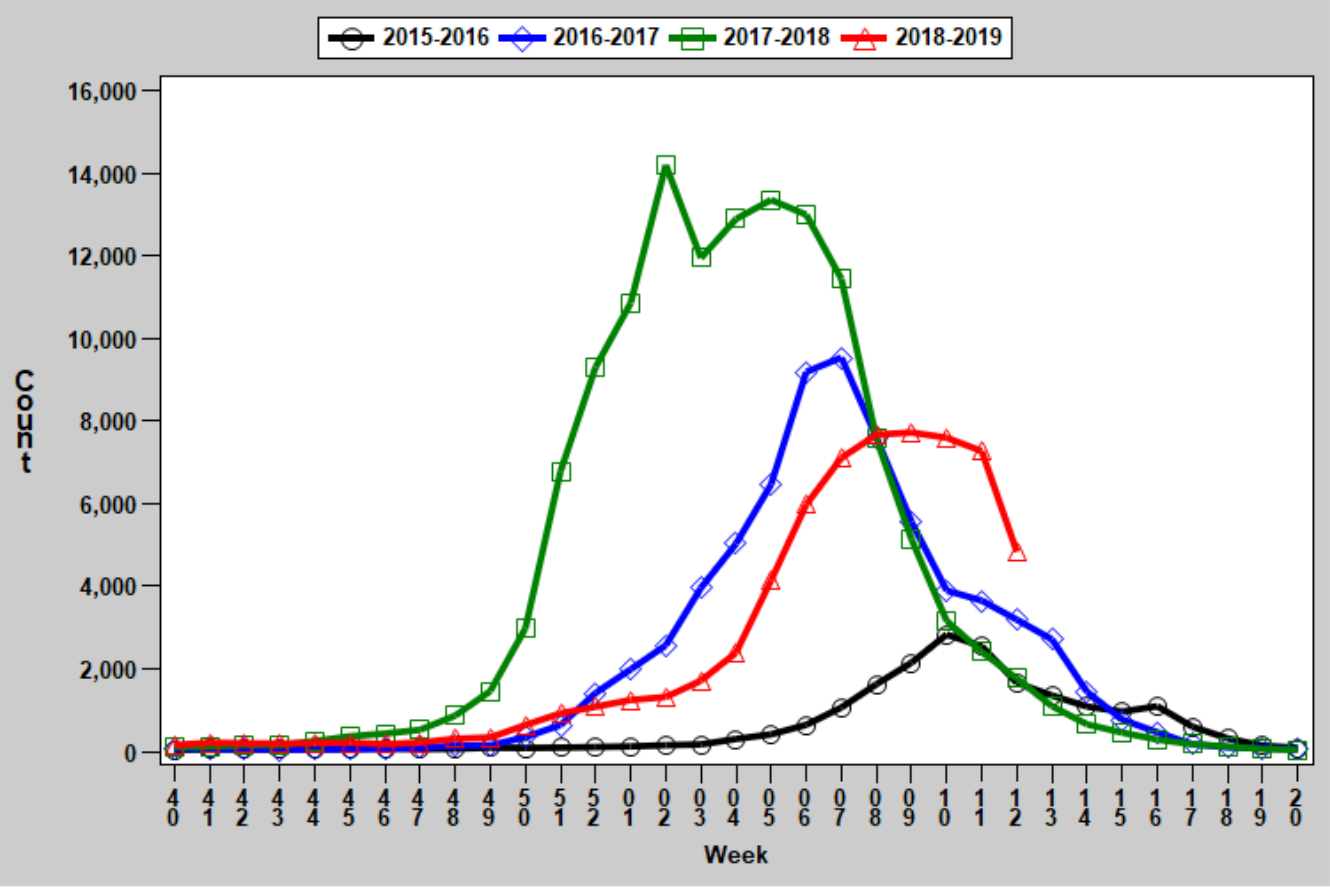
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 12 (March 17, 2019 – March 23, 2019)[*‡]

Region	Week 12 Cases	Week 12 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	733	108.27	7,015	1,036.19
Eastern	1,225	54.06	19,270	850.34
Northwest	1,264	79.12	12,502	782.59
Southeast	819	173.63	9,626	2,040.71
Southwest	789	73.65	15,415	1,438.91
Total	4,830	79.39	63,828	1,049.17

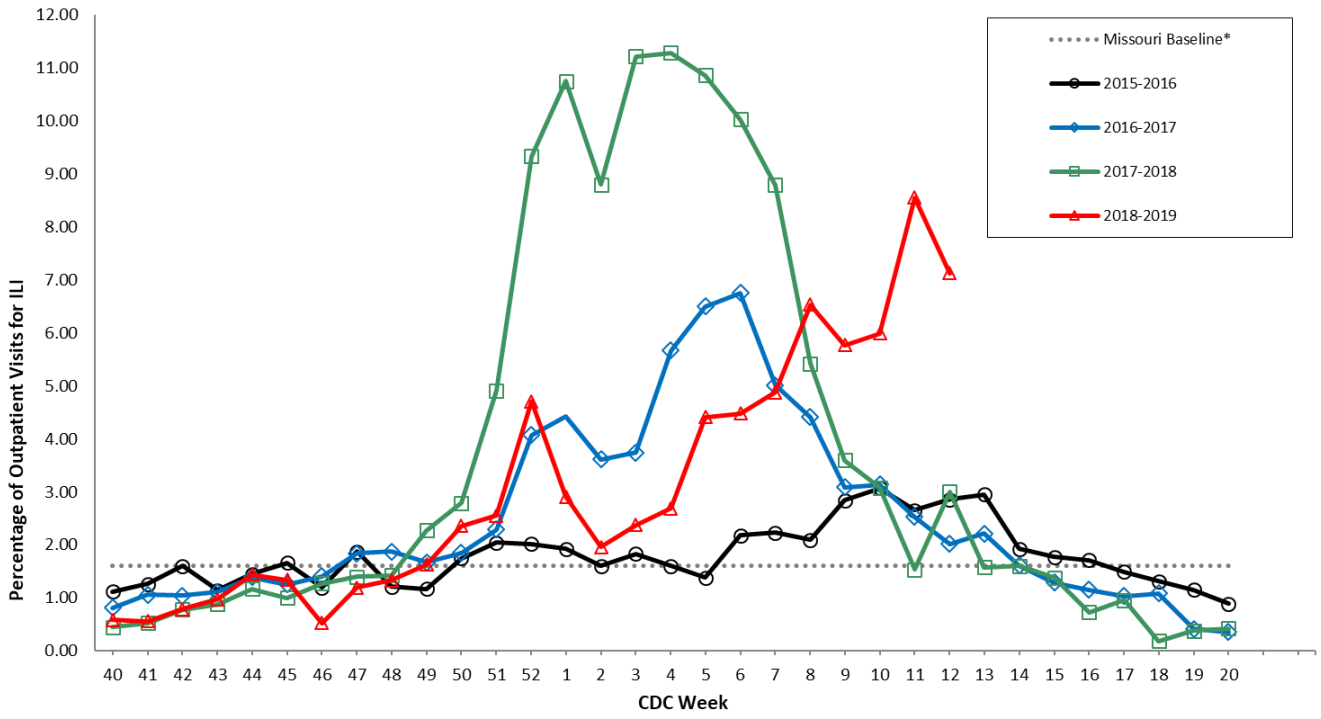
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

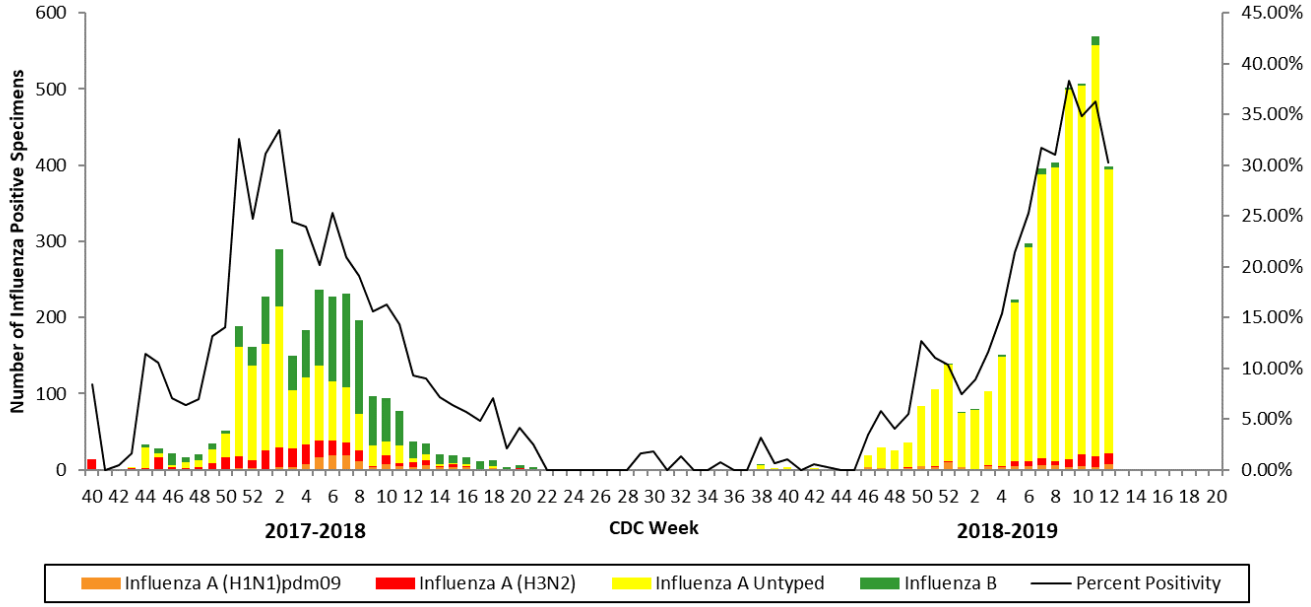
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

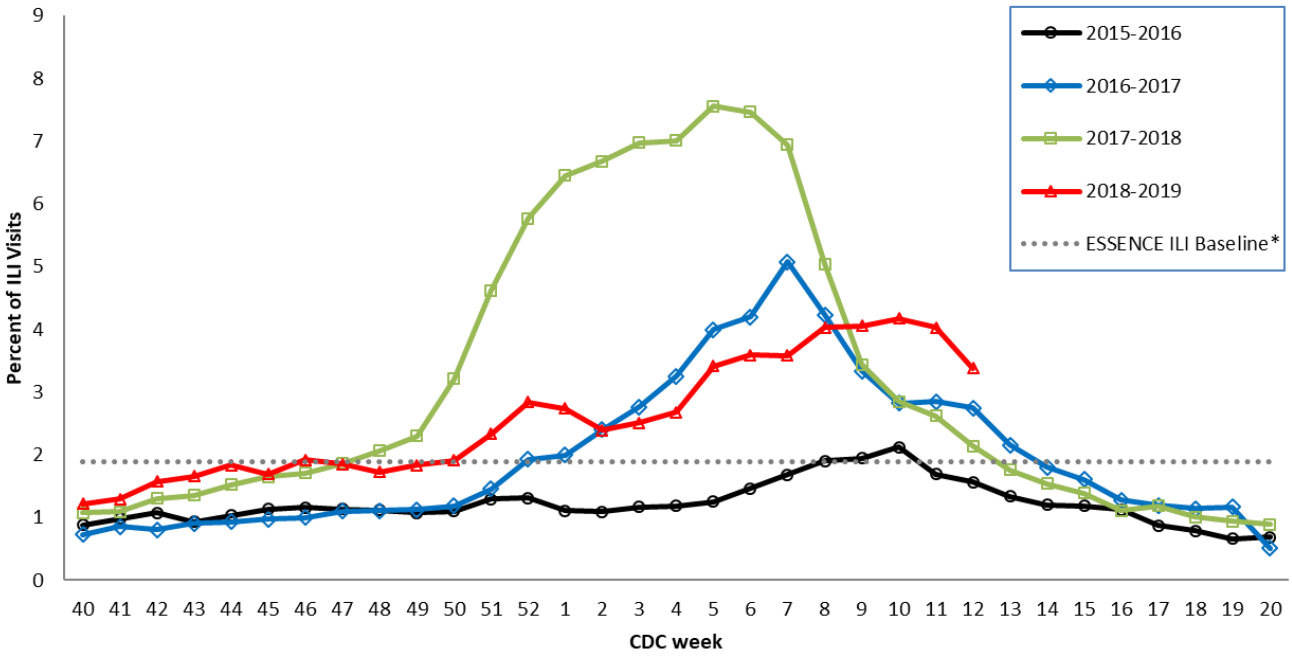
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

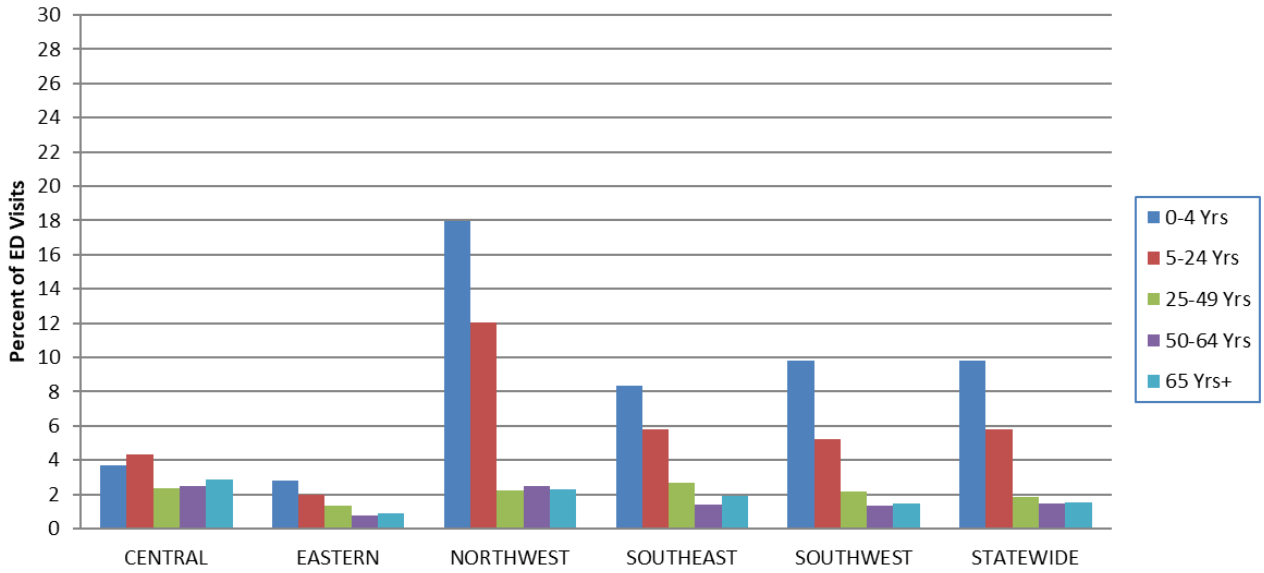
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 12, 2019*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*

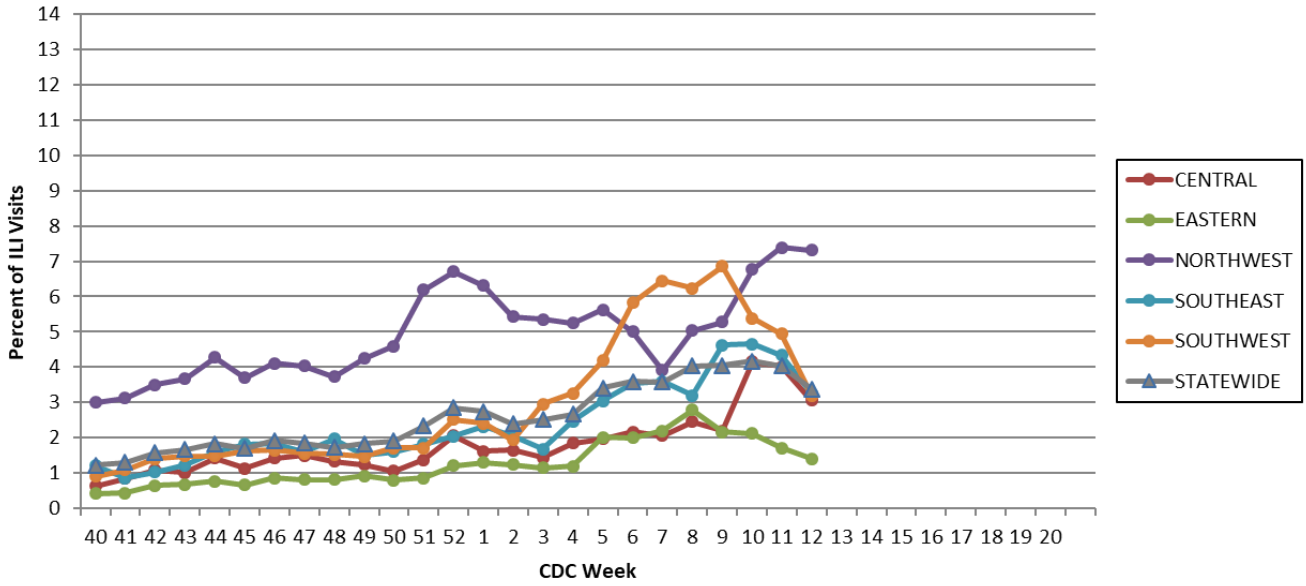

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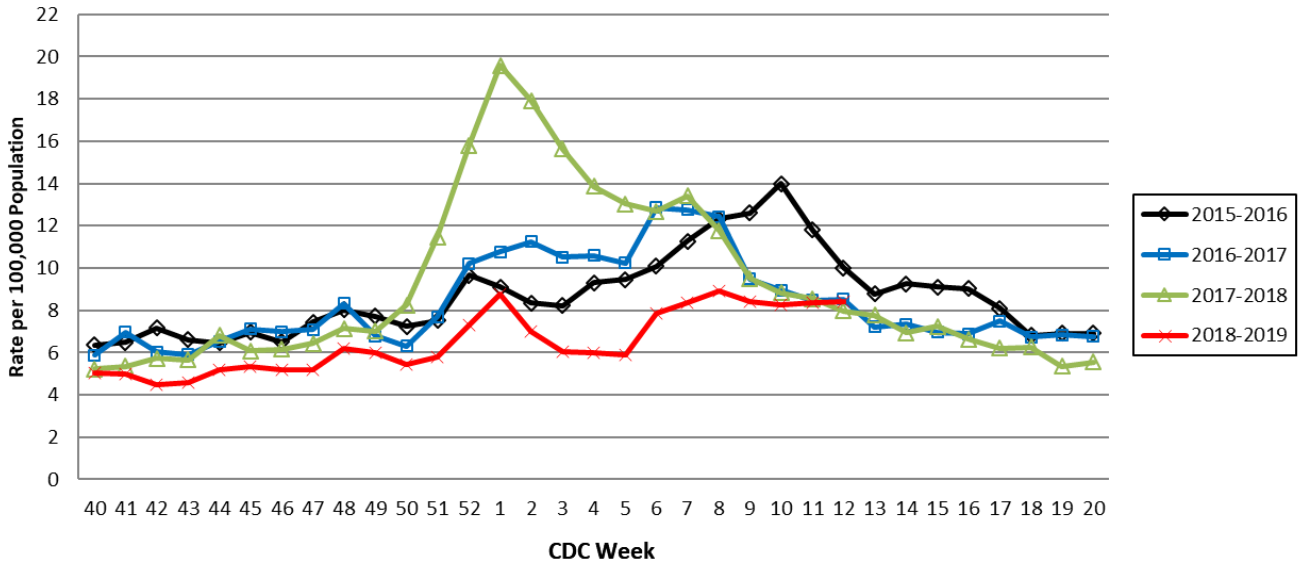
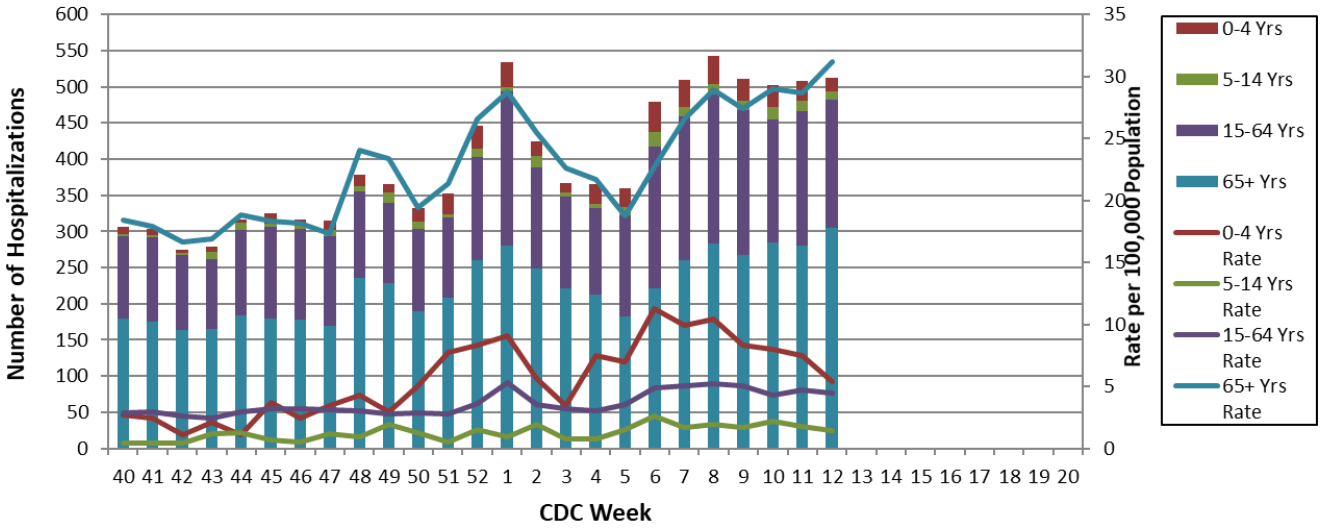
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 12, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 13: March 24, 2019 – March 30, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Widespread[2].

- During Week 13, a total of 2,754 laboratory-positive[3] influenza cases (2,578 influenza A, 164 influenza B, and 12 untyped) were reported. A season-to-date total of 68,807 laboratory-positive influenza cases have been reported in Missouri as of Week 13. The influenza type for reported season-to-date cases includes 92.9% influenza A, 6.3% influenza B and 0.8% untyped. Five laboratory-positive cases of influenza A (2 H1N1 and 3 H3) were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 13. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 13 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 6.04% (Figure 5) and 2.58% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 54 influenza-associated deaths have been reported in Missouri as of Week 13.[5] During Week 12, 62 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,400 P&I associated deaths in Missouri.[6]

- A season-to-date total of 20 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 13.

- Influenza activity decreased but remained elevated in the United States during Week 12. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Widespread is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 13**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 13**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 13 (March 24, 2019 – March 30, 2019)*

Influenza Type	Week 11	Week 12	Week 13	2018-2019* Season-to-Date
Influenza A	7,239	5,780	2,578	63,916
Influenza B	386	308	164	4,366
Influenza Unknown Or Untyped	65	39	12	525
Total	7,690	6,127	2,754	68,807

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 13 (March 24, 2019 – March 30, 2019)*‡

Age Group	Week 13 Cases	Week 13 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	535	142.91	13,047	3,485.15
05-24	1,049	65.38	29,898	1,863.37
25-49	484	25.29	13,320	696.11
50-64	292	23.62	6,892	557.44
65+	394	41.26	5,650	591.67
Total	2,754	45.27	68,807	1,131.01

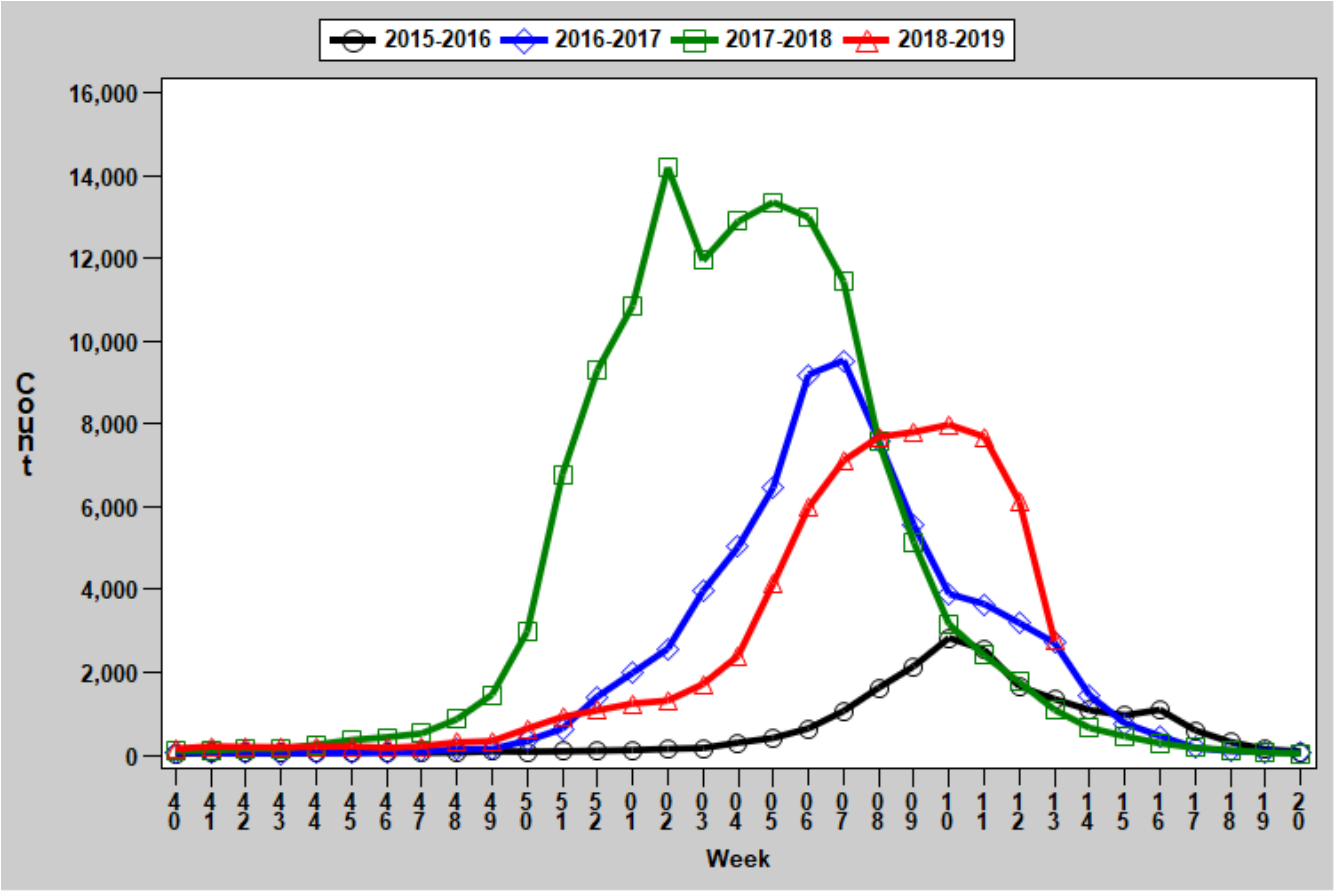
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 13 (March 24, 2019 – March 30, 2019)[*‡]

Region	Week 13 Cases	Week 13 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	590	87.15	7,938	1,172.53
Eastern	614	27.09	20,650	911.24
Northwest	699	43.76	13,863	867.78
Southeast	375	79.50	10,147	2,151.16
Southwest	476	44.43	16,209	1,513.02
Total	2,754	45.27	68,807	1,131.01

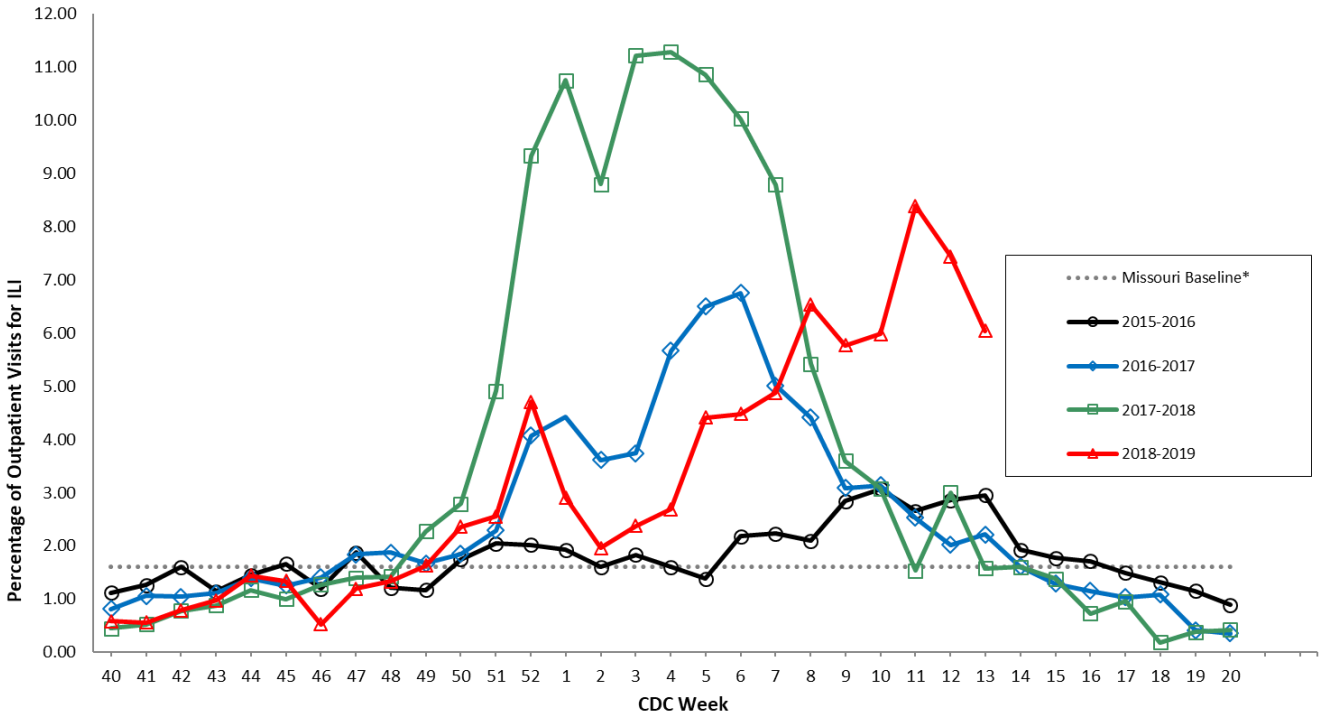
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

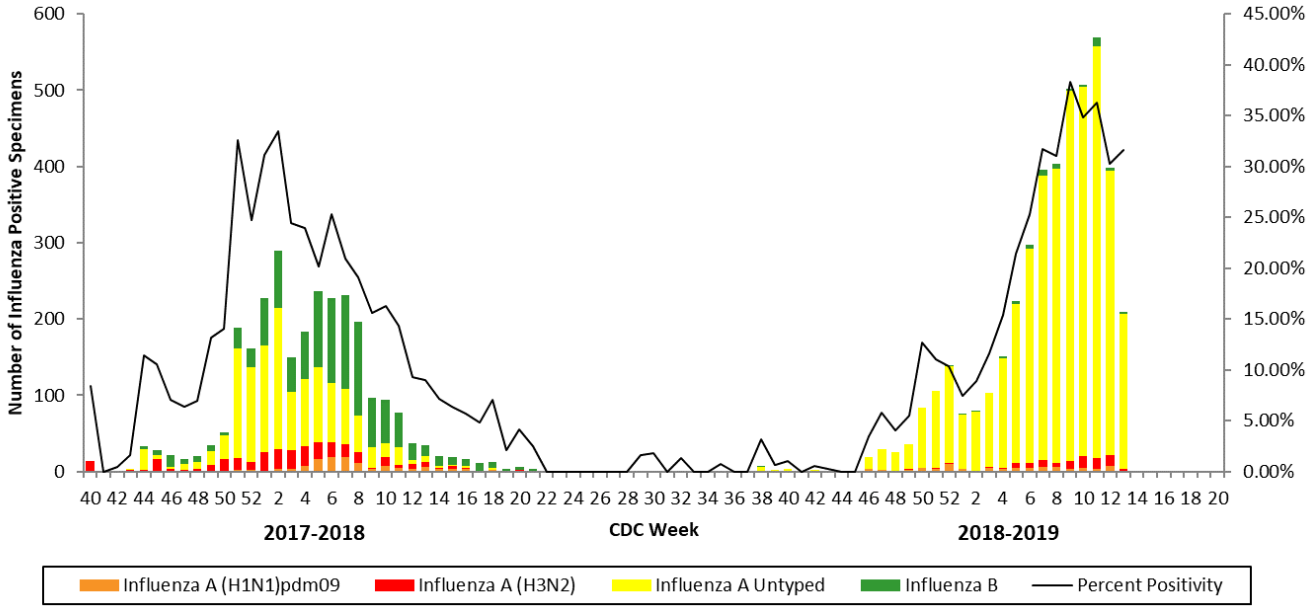
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

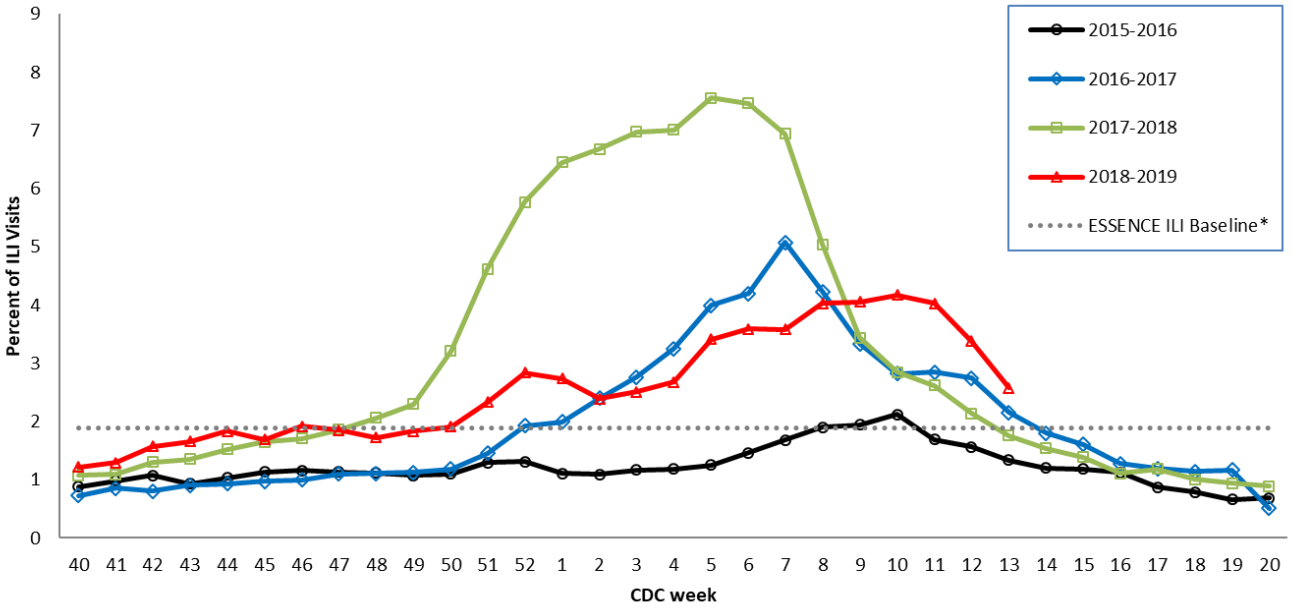
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

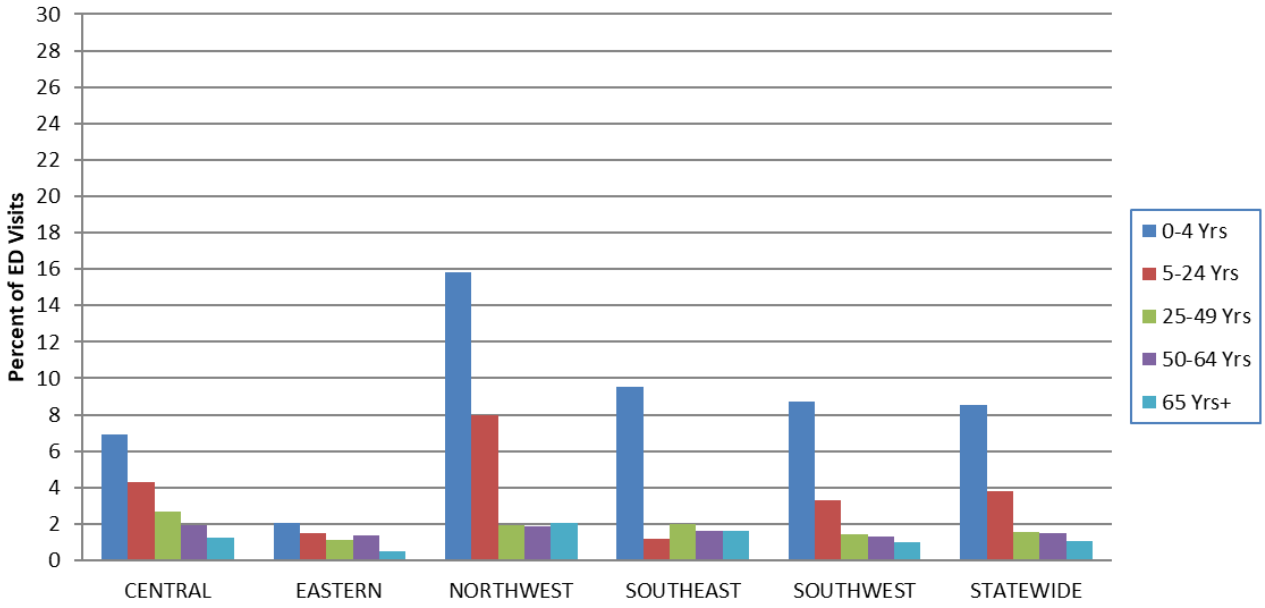
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

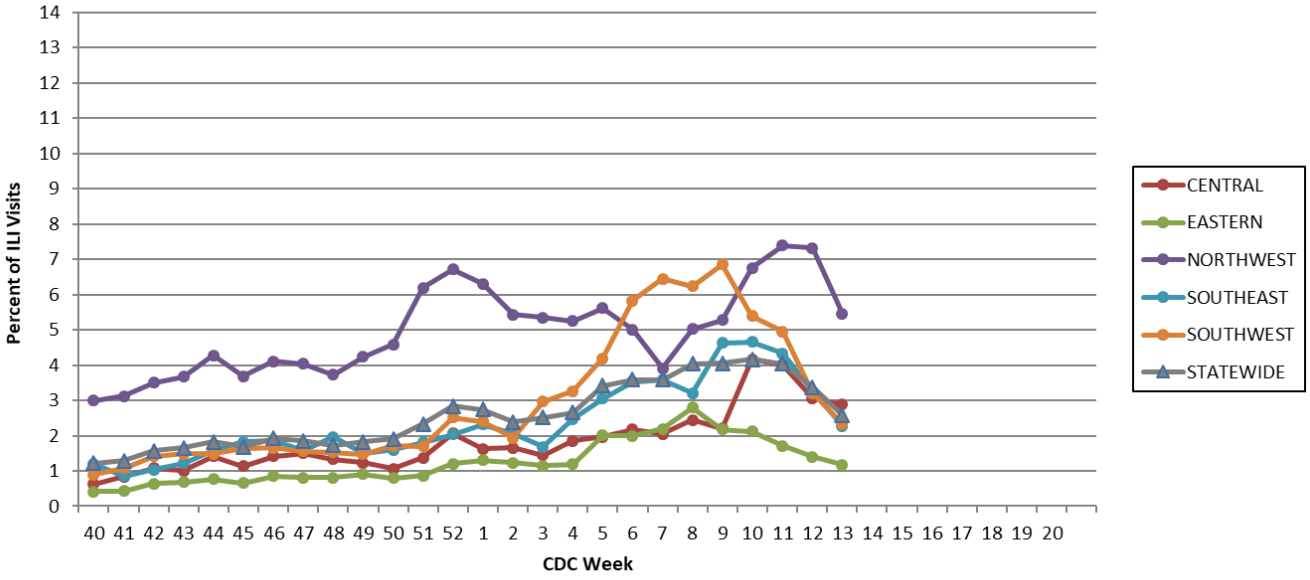
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 13, 2019*



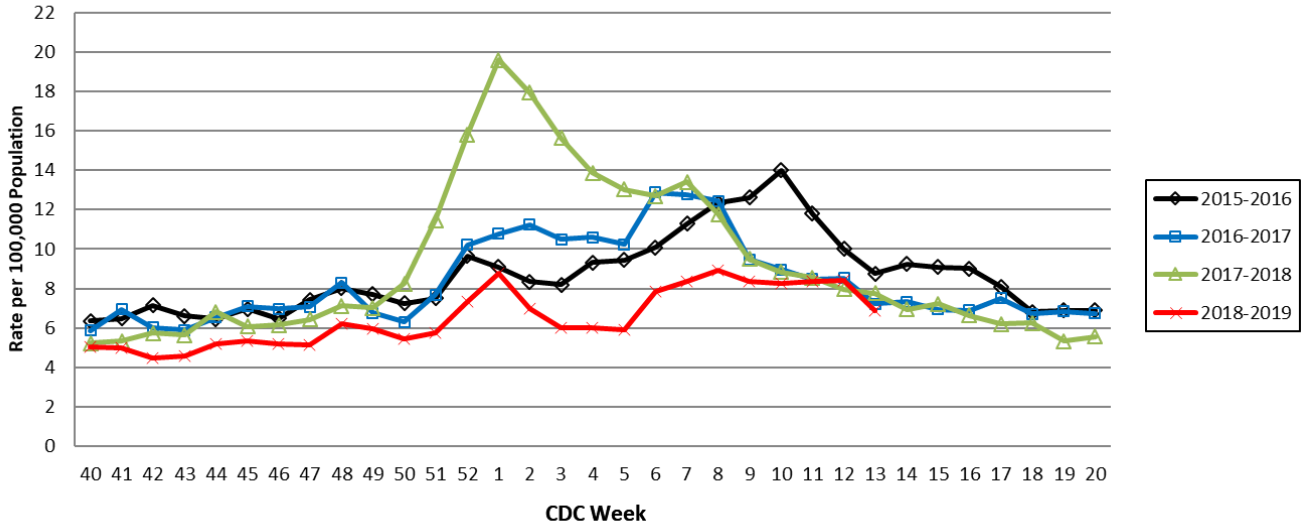
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



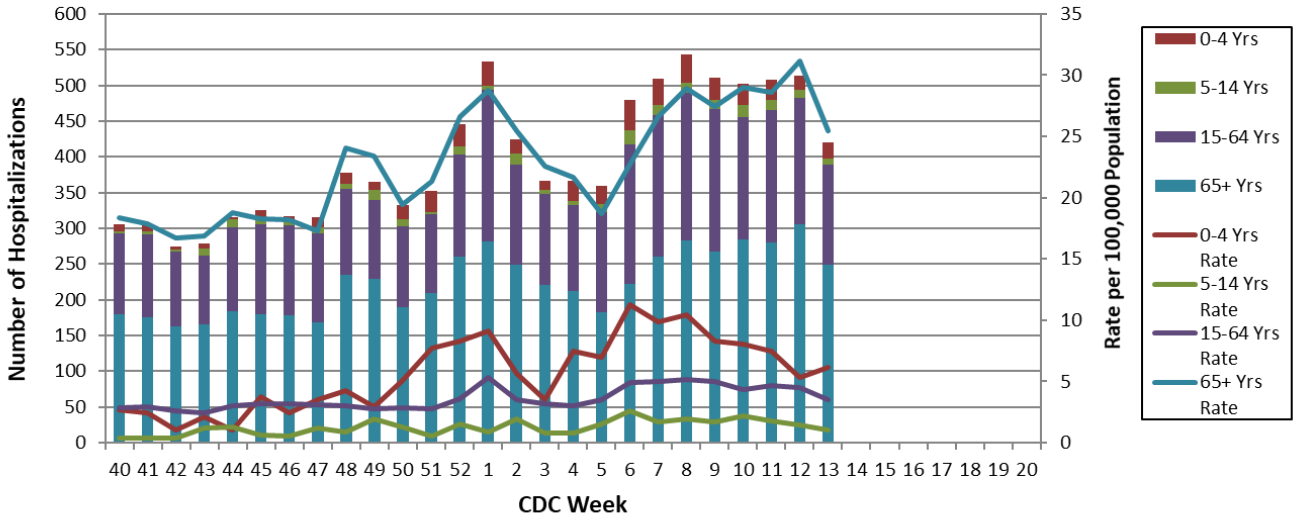
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 13, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
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Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 14: March 31, 2019 – April 6, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- During Week 14, a total of 1,965 laboratory-positive[3] influenza cases (1,824 influenza A, 133 influenza B, and 8 untyped) were reported. A season-to-date total of 72,546 laboratory-positive influenza cases have been reported in Missouri as of Week 14. The influenza type for reported season-to-date cases includes 92.9% influenza A, 6.3% influenza B and 0.8% untyped. One laboratory-positive case of influenza A (H3) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 14. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 14 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 4.35% (Figure 5) and 2.13% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 65 influenza-associated deaths have been reported in Missouri as of Week 14.[5] During Week 13, 74 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,474 P&I associated deaths in Missouri.[6]

- A season-to-date total of 20 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 14.

- Influenza activity decreased but remained elevated in the United States during Week 13. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions..

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 14**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 14**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 14 (March 31, 2019 – April 6, 2019)*

Influenza Type	Week 12	Week 13	Week 14	2018-2019* Season-to-Date
Influenza A	6,118	3,566	1,824	67,402
Influenza B	319	224	133	4,587
Influenza Unknown Or Untyped	40	33	8	557
Total	6,477	3,823	1,965	72,546

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 14 (March 31, 2019 – April 6, 2019)*‡

Age Group	Week 14 Cases	Week 14 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	400	106.85	13,789	3,683.35
05-24	717	44.69	31,341	1,953.30
25-49	308	16.10	13,952	729.14
50-64	201	16.26	7,303	590.68
65+	339	35.50	6,161	645.18
Total	1,965	32.30	72,546	1,192.47

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 14 (March 31, 2019 – April 6, 2019)[*‡]

Region	Week 14 Cases	Week 14 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	321	47.42	8,391	1,239.44
Eastern	440	19.42	21,350	942.12
Northwest	629	39.37	15,297	957.55
Southeast	334	70.81	10,903	2,311.43
Southwest	241	22.50	16,605	1,549.99
Total	1,965	32.30	72,546	1,192.47

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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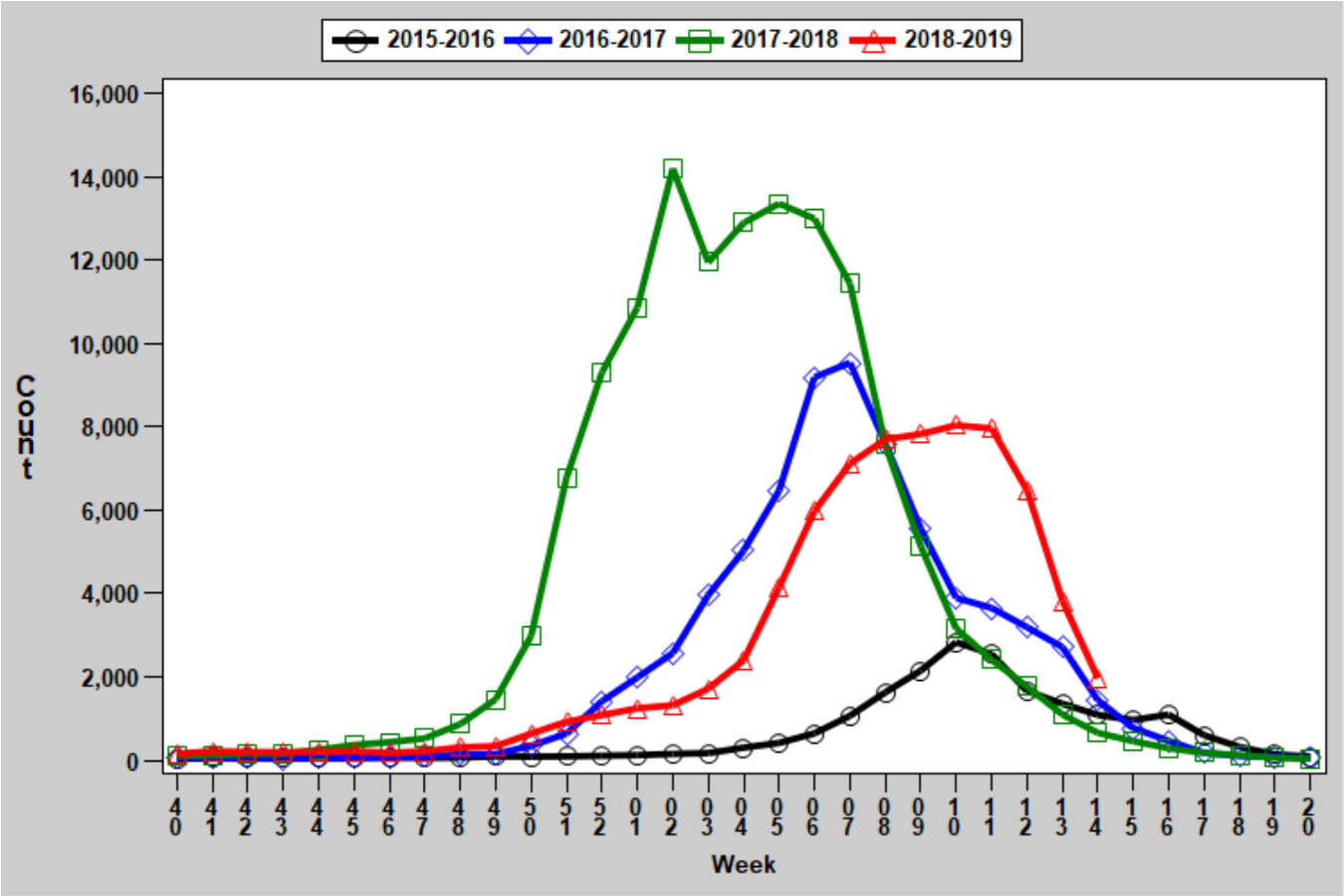
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



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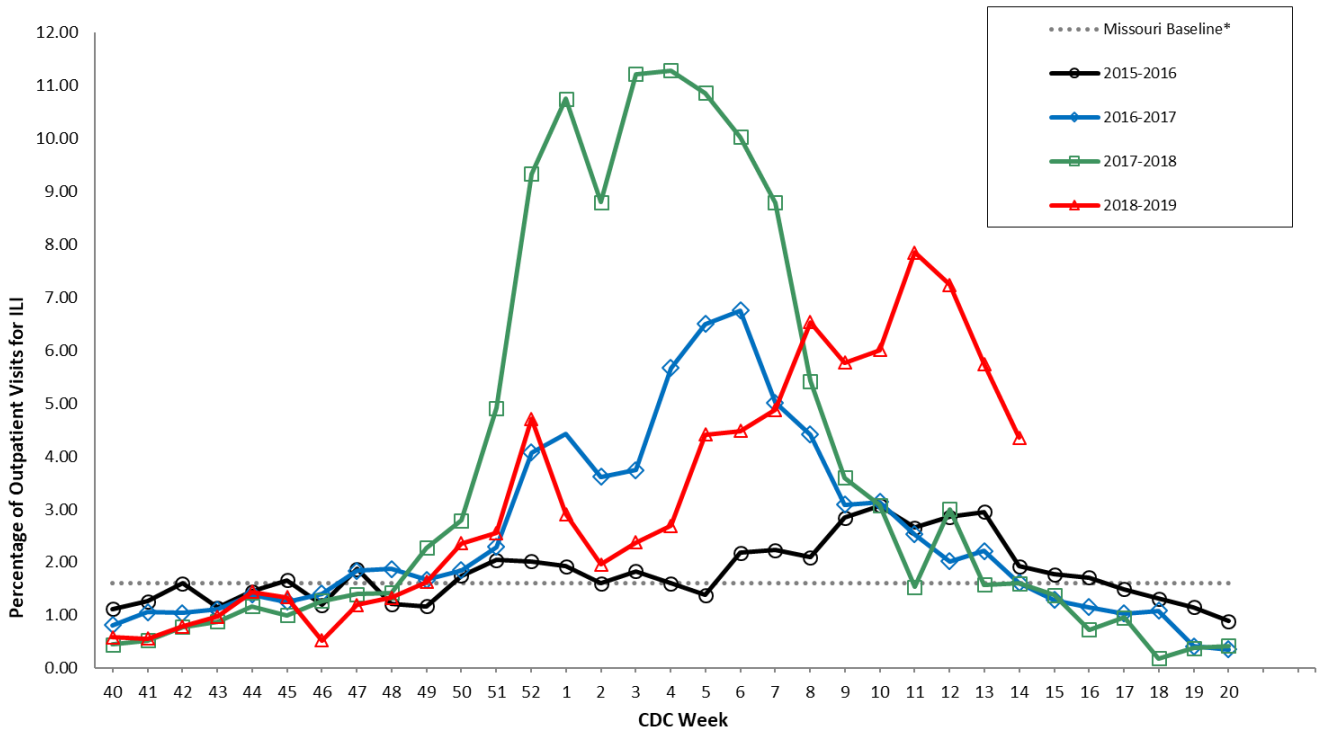
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

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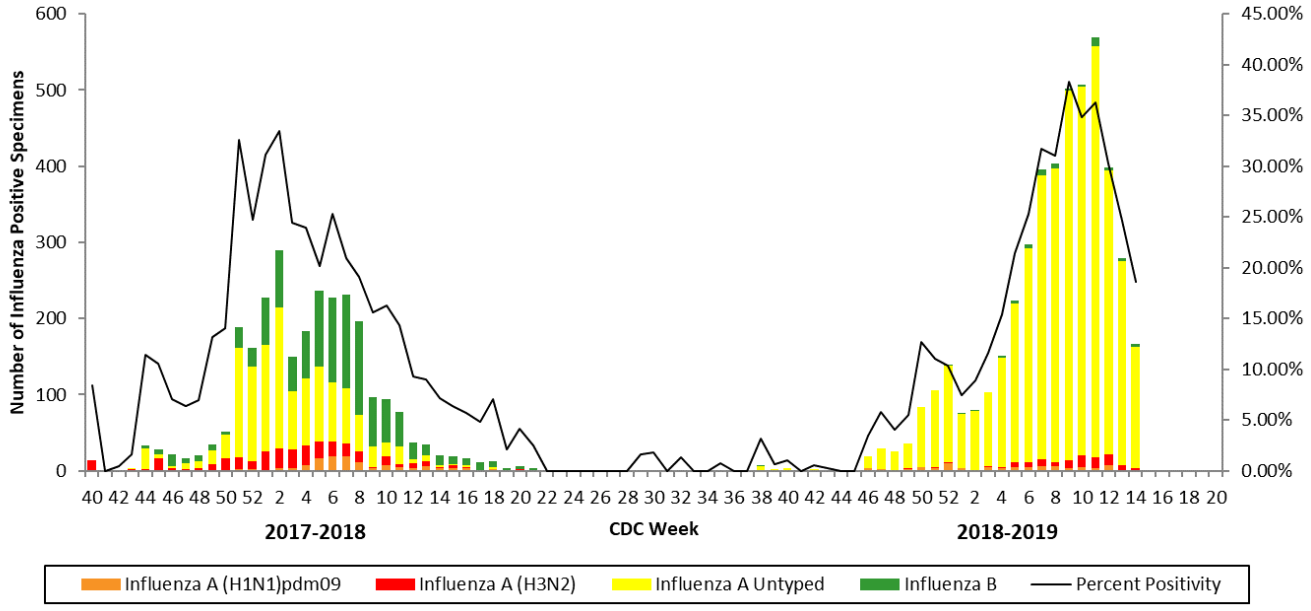
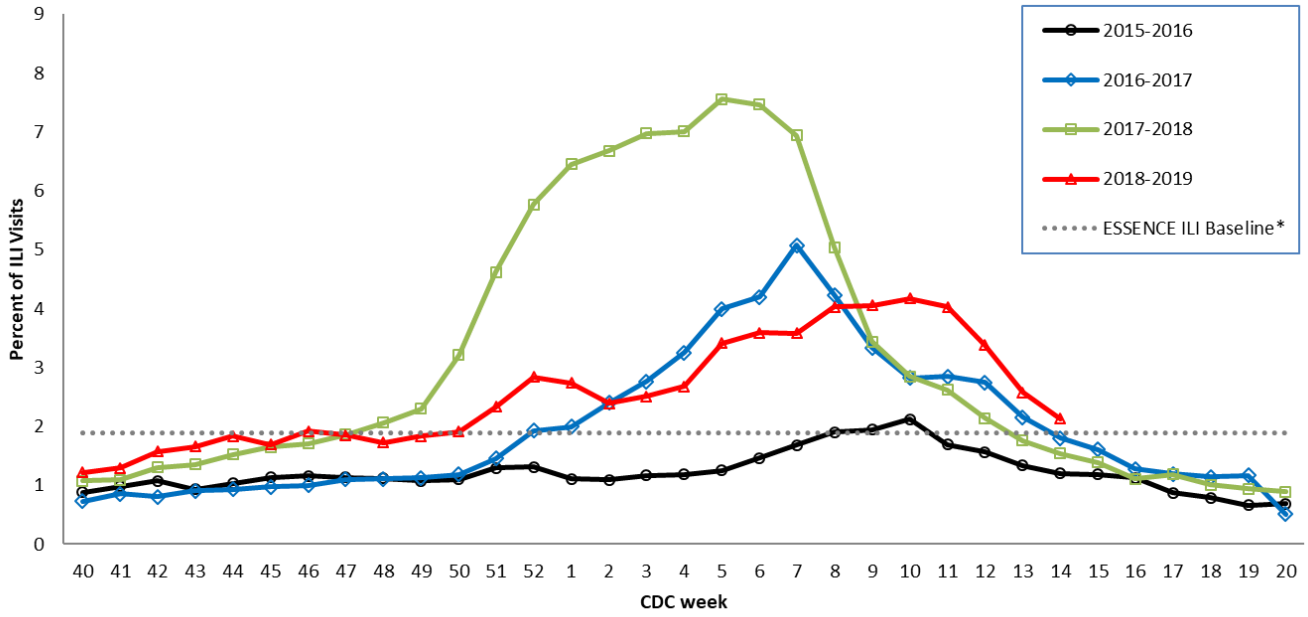
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

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Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 14, 2019*

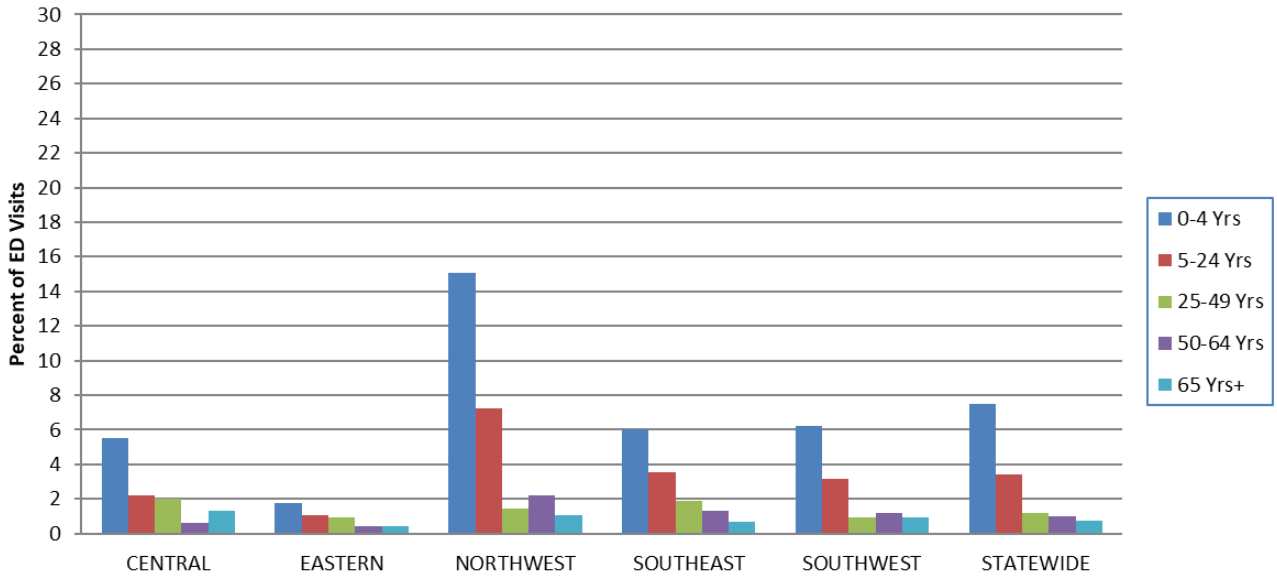

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Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*

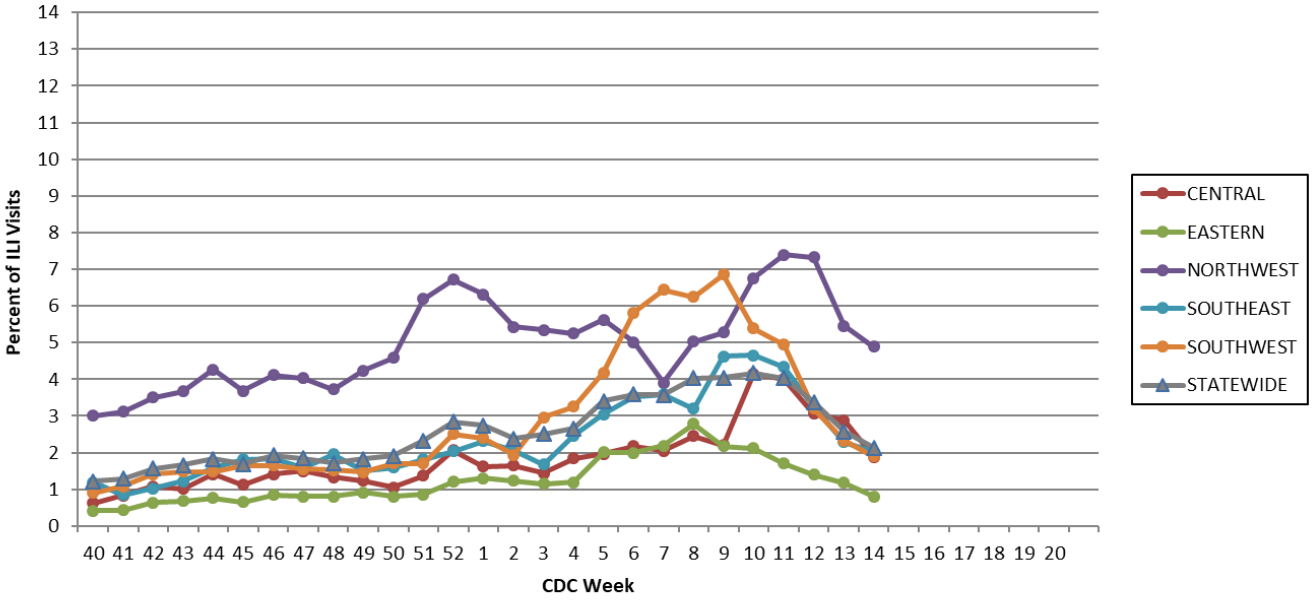

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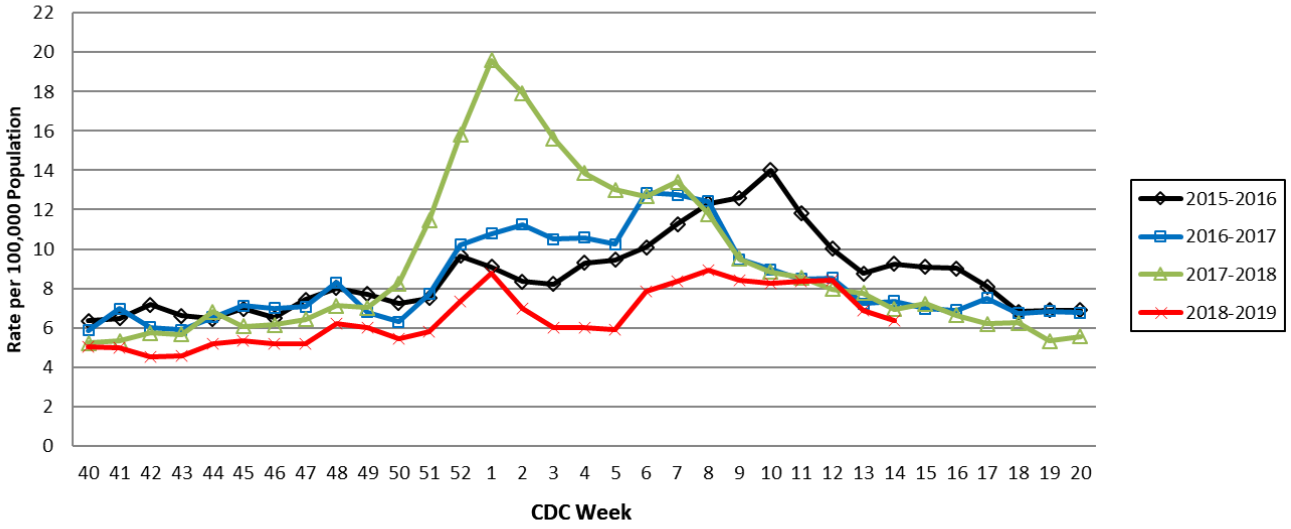
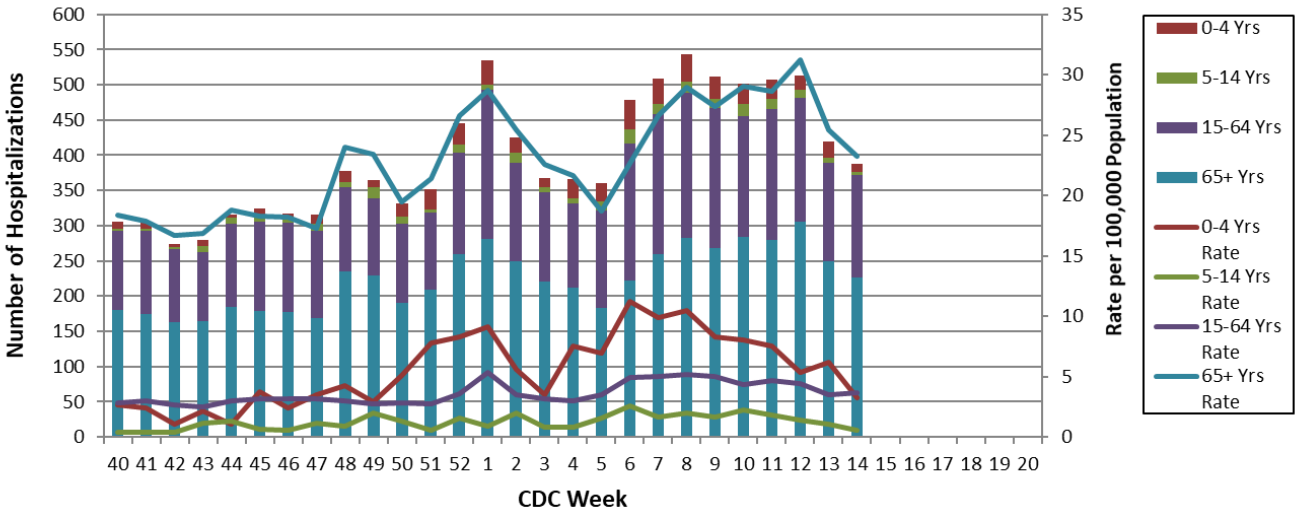
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 14, 2018-2019 Influenza Season



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Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 15: April 7, 2019 – April 13, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional[2].

- During Week 15, a total of 937 laboratory-positive[3] influenza cases (841 influenza A, 93 influenza B, and 3 untyped) were reported. A season-to-date total of 75,297 laboratory-positive influenza cases have been reported in Missouri as of Week 15. The influenza type for reported season-to-date cases includes 92.8% influenza A, 6.4% influenza B and 0.8% untyped. Two laboratory-positive case of influenza A (H1) was reported by the Missouri State Public Health Laboratory (MSPHL) during Week 15. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 15 (Figure 6).

- Influenza-like illness (ILI) activity was above baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and below baseline for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 2.96% (Figure 5) and 1.61% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 74 influenza-associated deaths have been reported in Missouri as of Week 15.[5] During Week 14, 61 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,535 P&I associated deaths in Missouri.[6]

- A season-to-date total of 21 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 15.

- Influenza activity continued to decrease but remained elevated in the United States during Week 14. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions..

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 15**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 15**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 15 (April 7, 2019 – April 13, 2019)*

Influenza Type	Week 13	Week 14	Week 15	2018-2019* Season-to-Date
Influenza A	3,775	2,289	841	69,910
Influenza B	246	187	93	4,808
Influenza Unknown Or Untyped	32	20	3	579
Total	4,053	2,496	937	75,297

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 15 (April 7, 2019 – April 13, 2019)*‡

Age Group	Week 15 Cases	Week 15 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	196	52.36	14,335	3,829.20
05-24	355	22.13	32,413	2,020.11
25-49	178	9.30	14,505	758.04
50-64	115	9.30	7,604	615.02
65+	93	9.74	6,440	674.40
Total	937	15.40	75,297	1,237.69

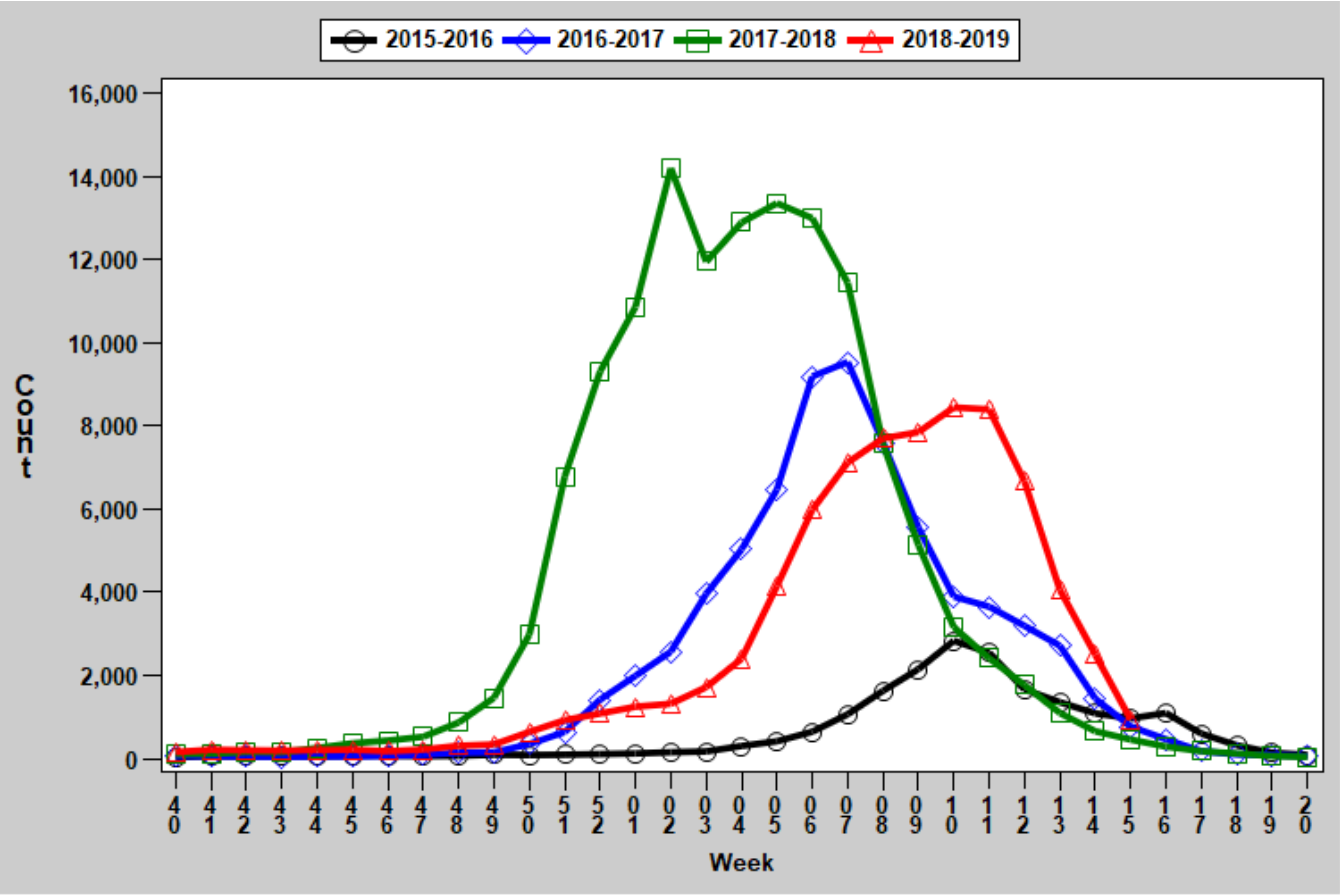
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 15 (April 7, 2019 – April 13, 2019)[*‡]

Region	Week 15 Cases	Week 15 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	181	26.74	8,607	1,271.35
Eastern	237	10.46	22,919	1,011.36
Northwest	315	19.72	15,881	994.10
Southeast	101	21.41	11,057	2,344.08
Southwest	103	9.61	16,833	1,571.27
Total	937	15.40	75,297	1,237.69

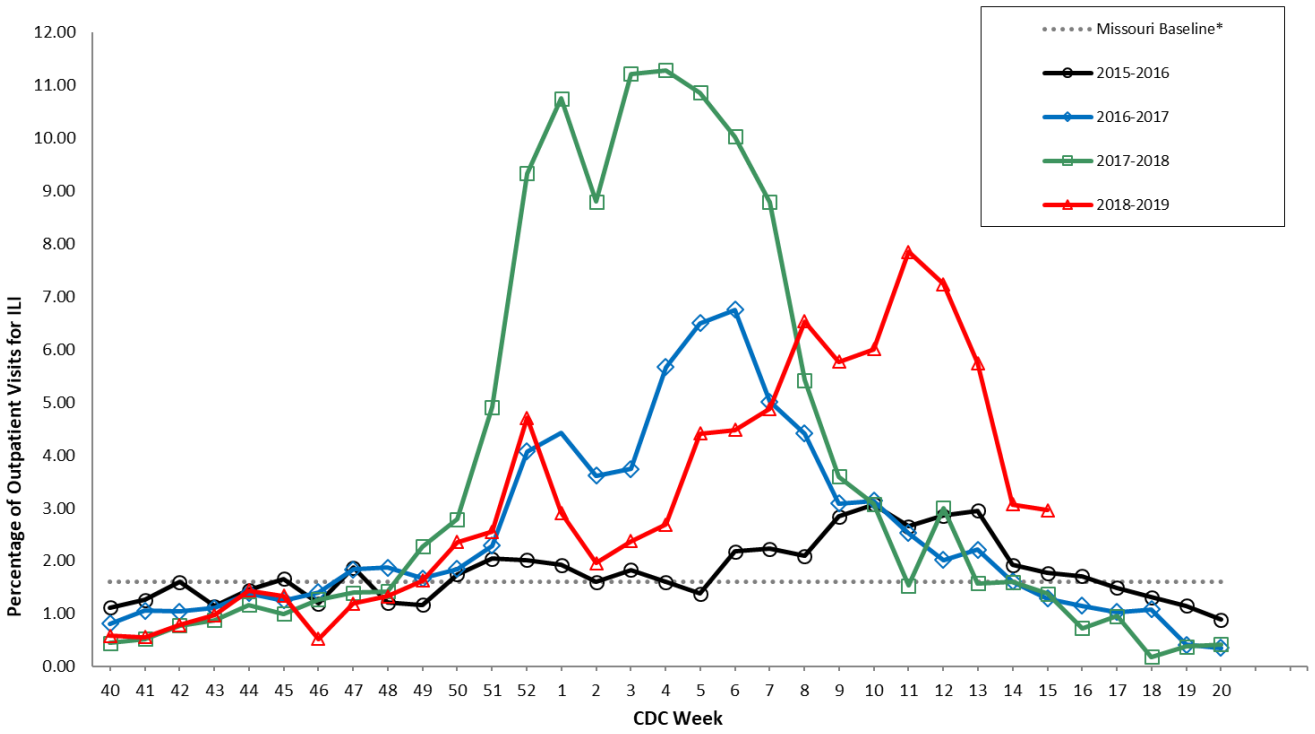
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

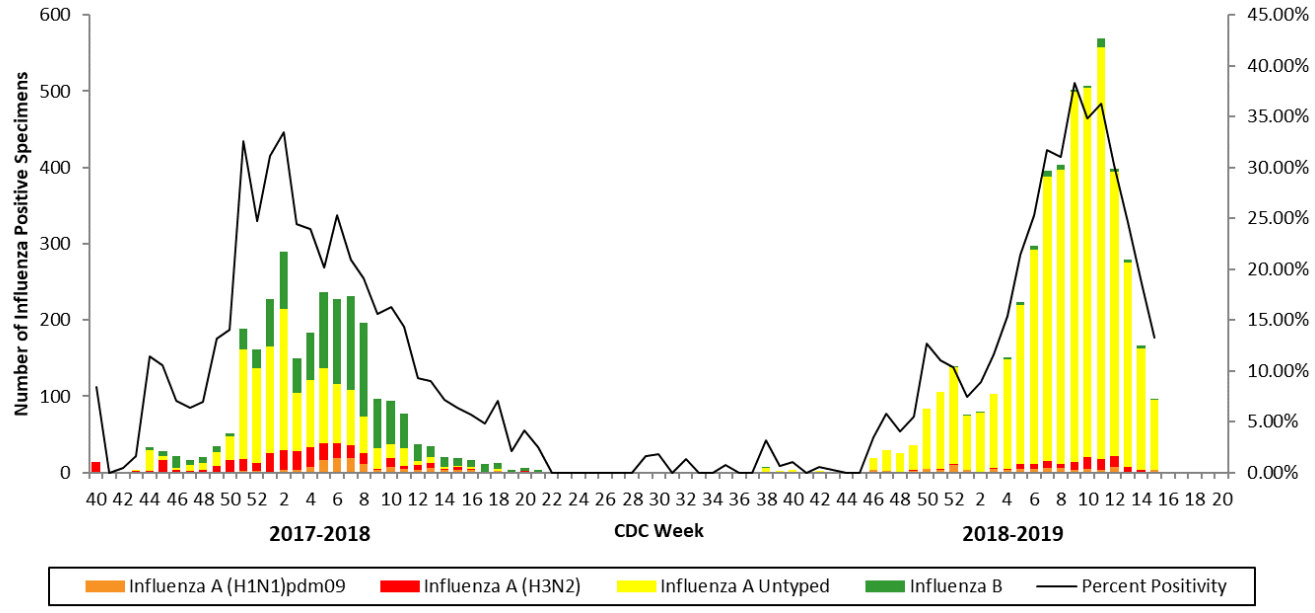
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

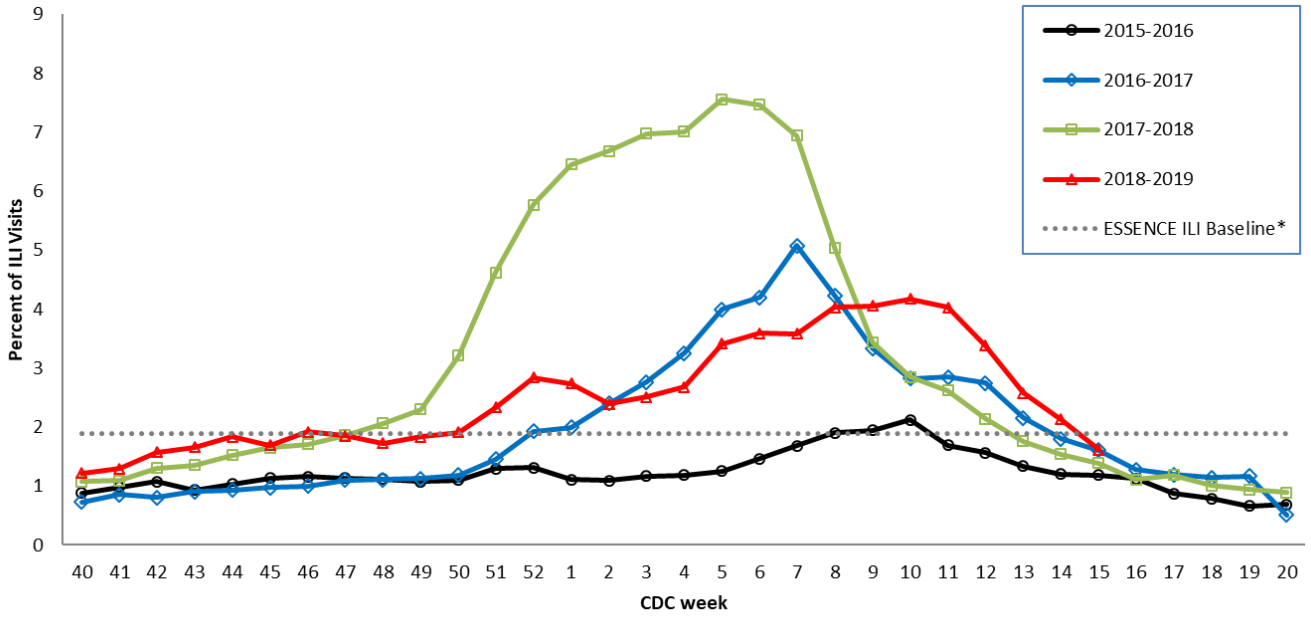
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

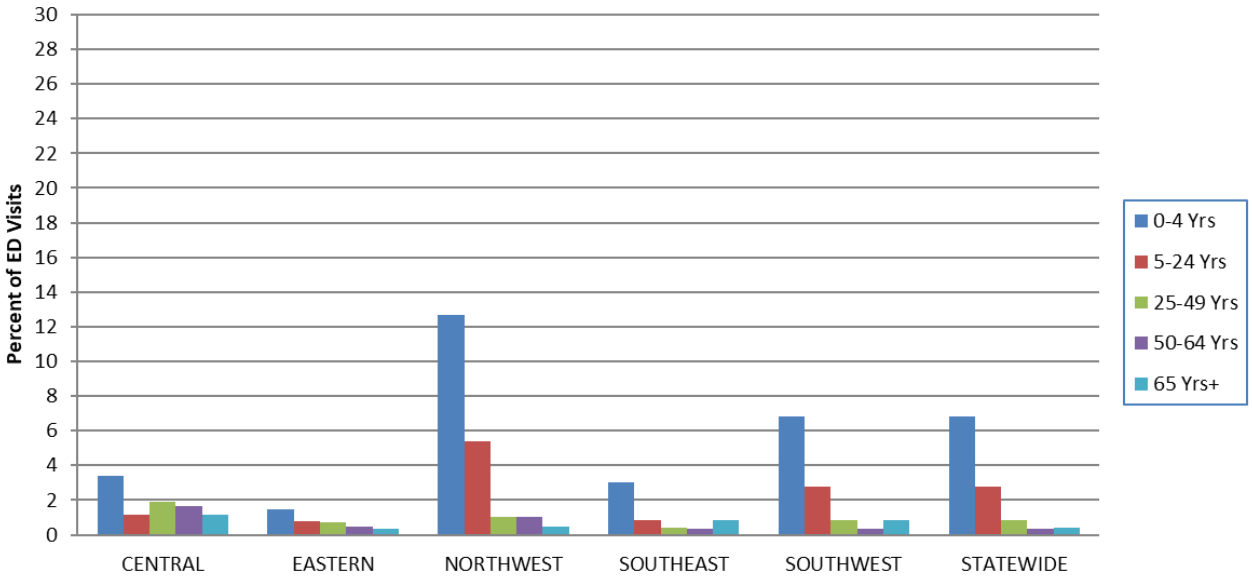
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

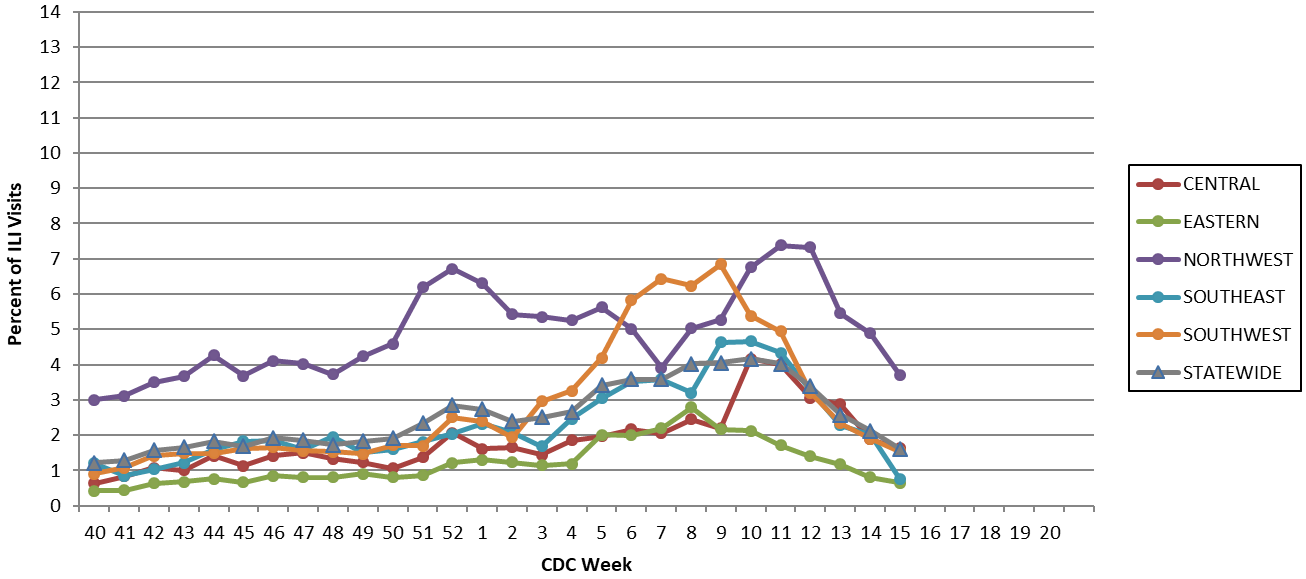
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 15, 2019*



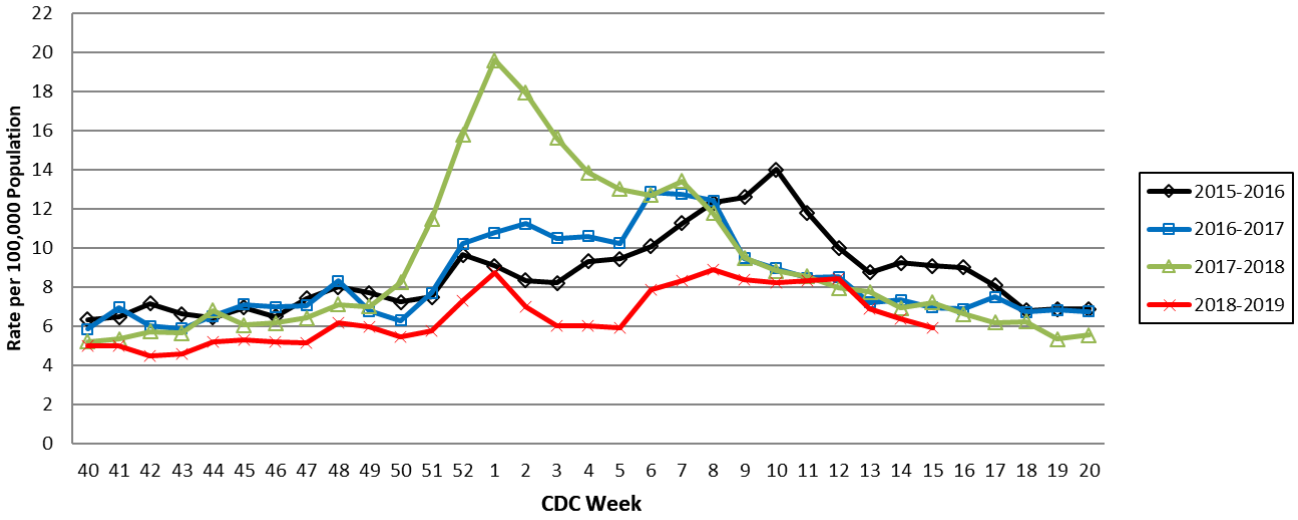
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



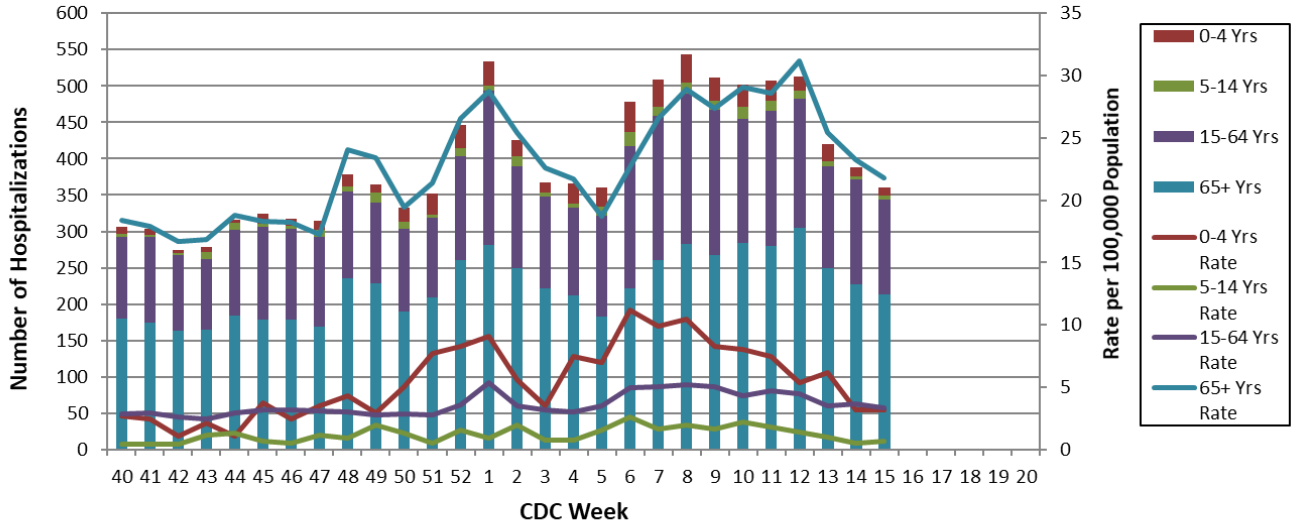
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 15, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 16: April 14, 2019 – April 20, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Local[2].

- During Week 16, a total of 424 laboratory-positive[3] influenza cases (366 influenza A and 58 influenza B) were reported. A season-to-date total of 76,127 laboratory-positive influenza cases have been reported in Missouri as of Week 16. The influenza type for reported season-to-date cases includes 92.8% influenza A, 6.4% influenza B and 0.8% untyped. No laboratory-positive case of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 16. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 16 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.34% (Figure 5) and 1.5% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 81 influenza-associated deaths have been reported in Missouri as of Week 16.[5] During Week 15, 56 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,591 P&I associated deaths in Missouri.[6]

- A season-to-date total of 21 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 16.

- Influenza activity continued to decrease but remained elevated in the United States during Week 15. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Local is defined as: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 16**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 16**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 16 (April 14, 2019 – April 20, 2019)*

Influenza Type	Week 14	Week 15	Week 16	2018-2019* Season-to-Date
Influenza A	2,410	1,045	366	70,651
Influenza B	191	115	58	4,895
Influenza Unknown Or Untyped	21	4	0	581
Total	2,622	1,164	424	76,127

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 16 (April 14, 2019 – April 20, 2019)*‡

Age Group	Week 16 Cases	Week 16 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	83	22.17	14,498	3,872.74
05-24	146	9.10	32,718	2,039.12
25-49	82	4.29	14,669	766.61
50-64	45	3.64	7,683	621.41
65+	68	7.12	6,559	686.86
Total	424	6.97	76,127	1,251.33

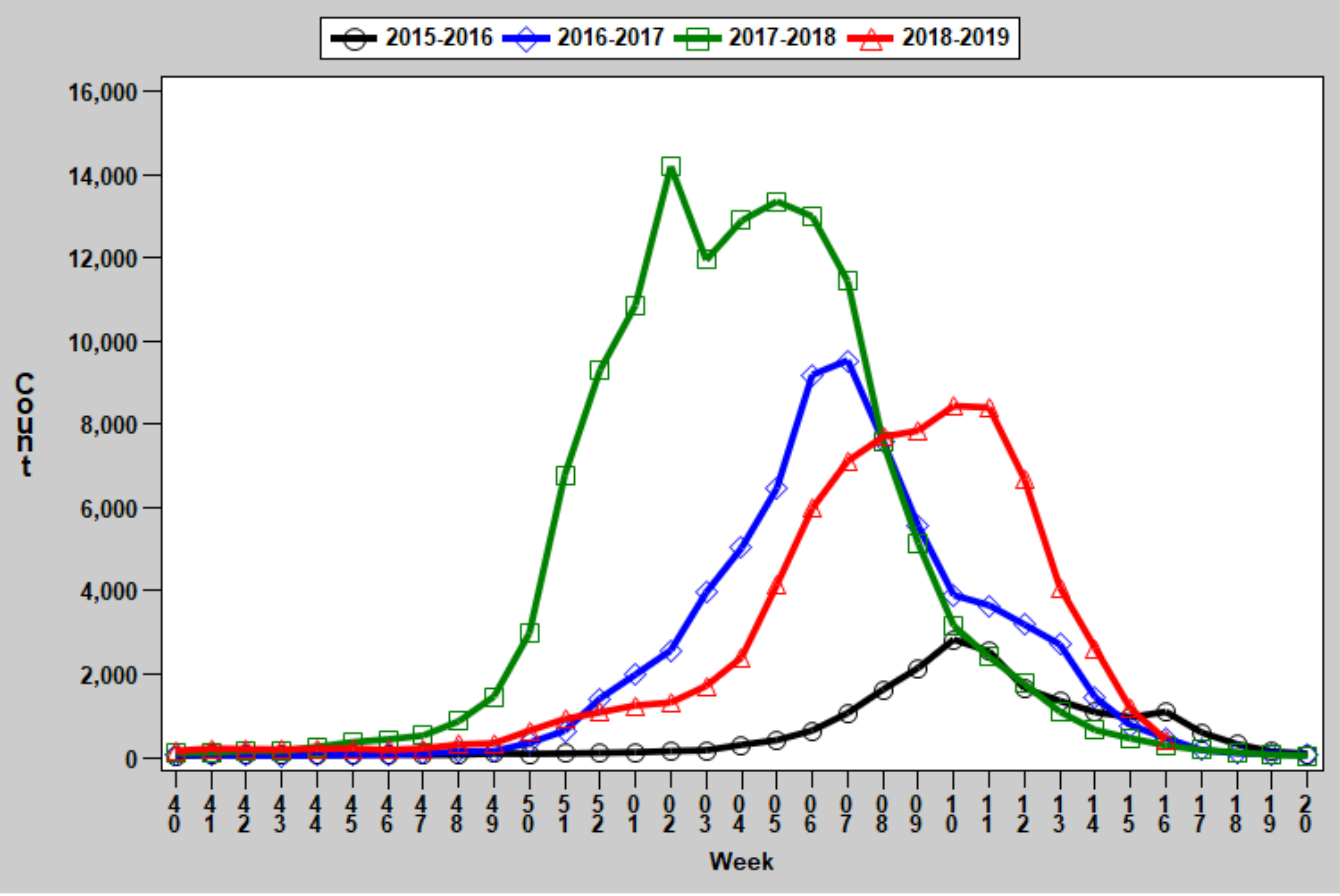
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 16 (April 14, 2019 – April 20, 2019)[*‡]

Region	Week 16 Cases	Week 16 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	83	12.26	8,722	1,288.33
Eastern	120	5.30	23,070	1,018.02
Northwest	114	7.14	16,160	1,011.57
Southeast	69	14.63	11,169	2,367.82
Southwest	38	3.55	17,006	1,587.42
Total	424	6.97	76,127	1,251.33

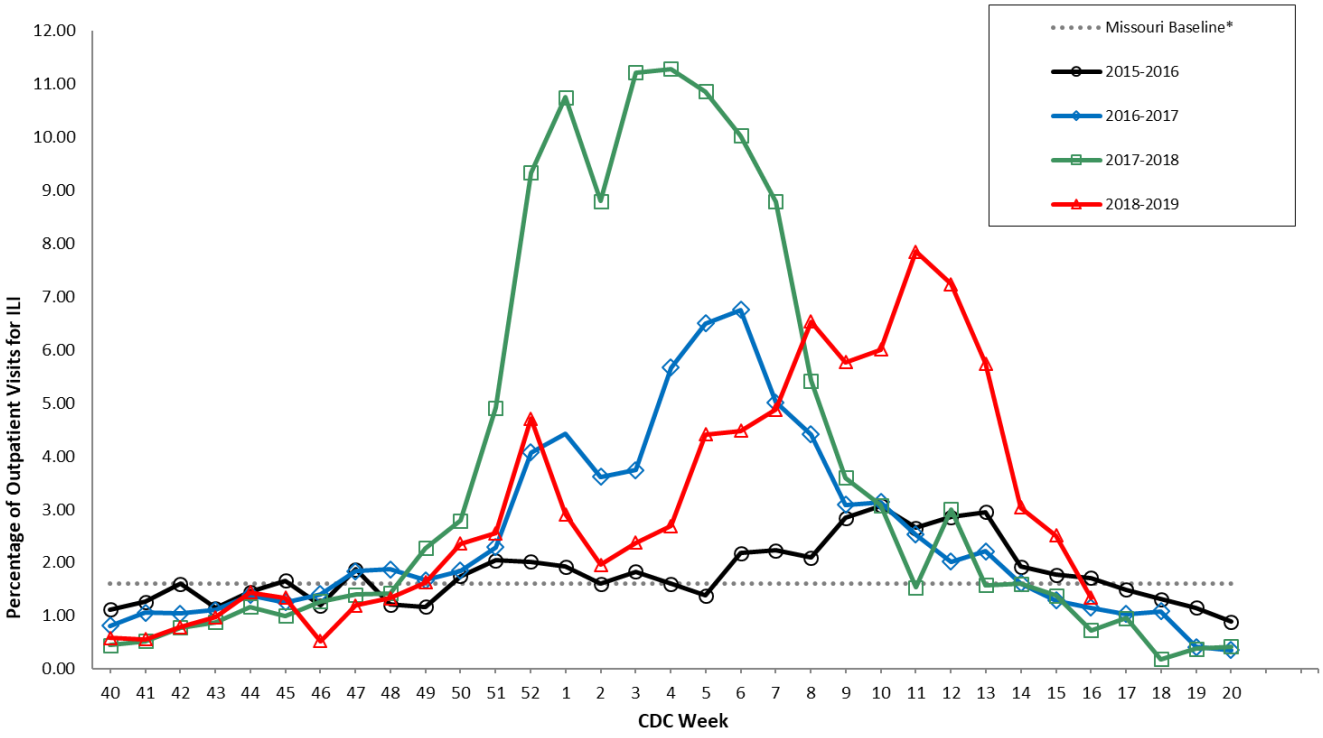
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

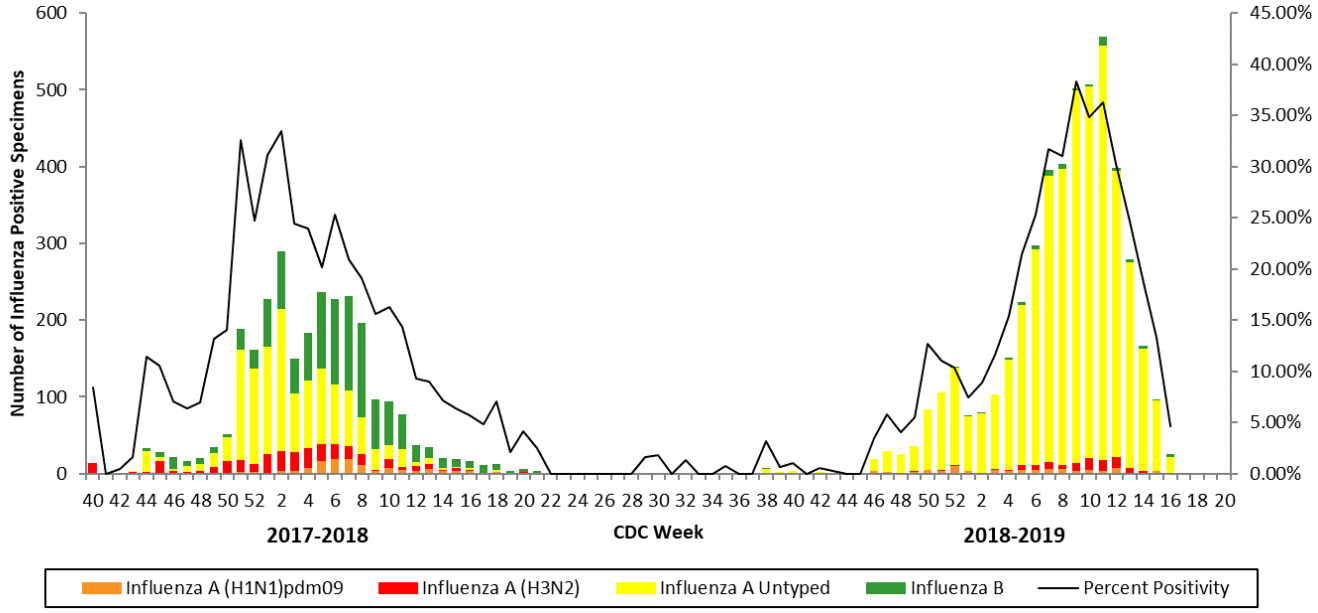
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

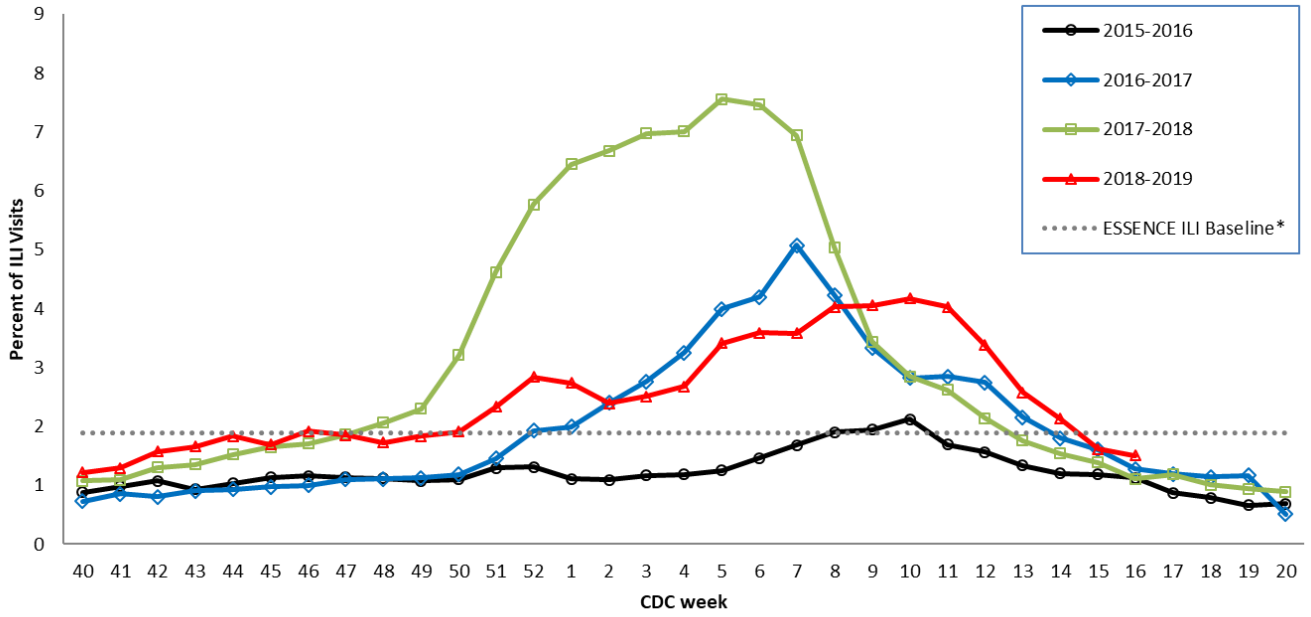
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

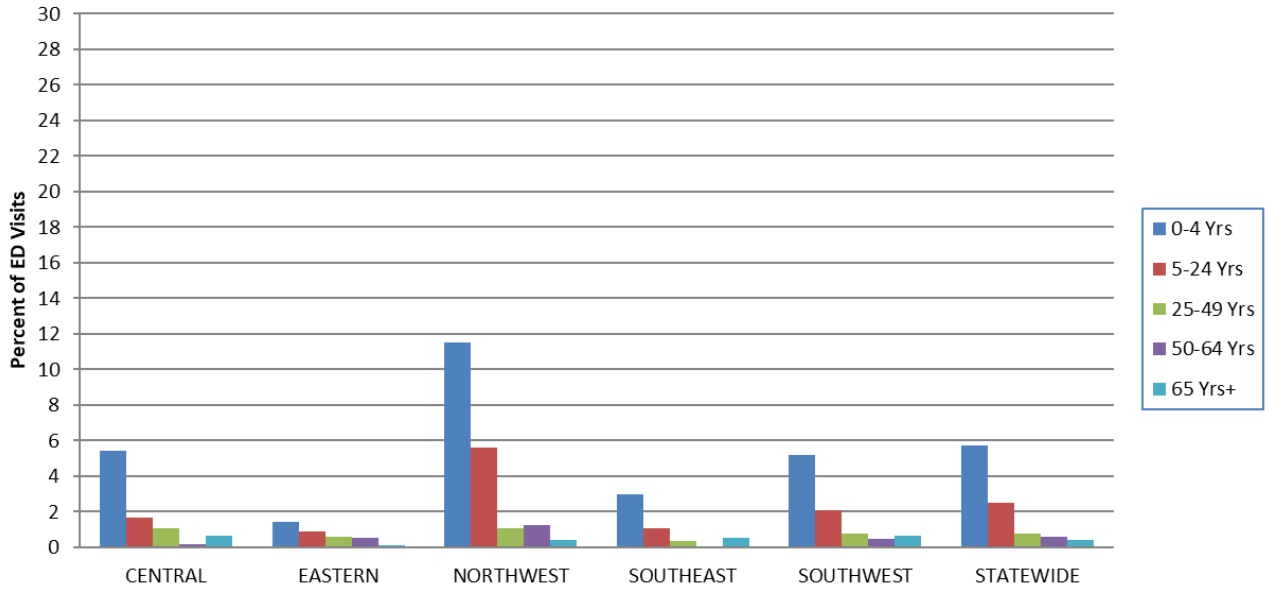
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

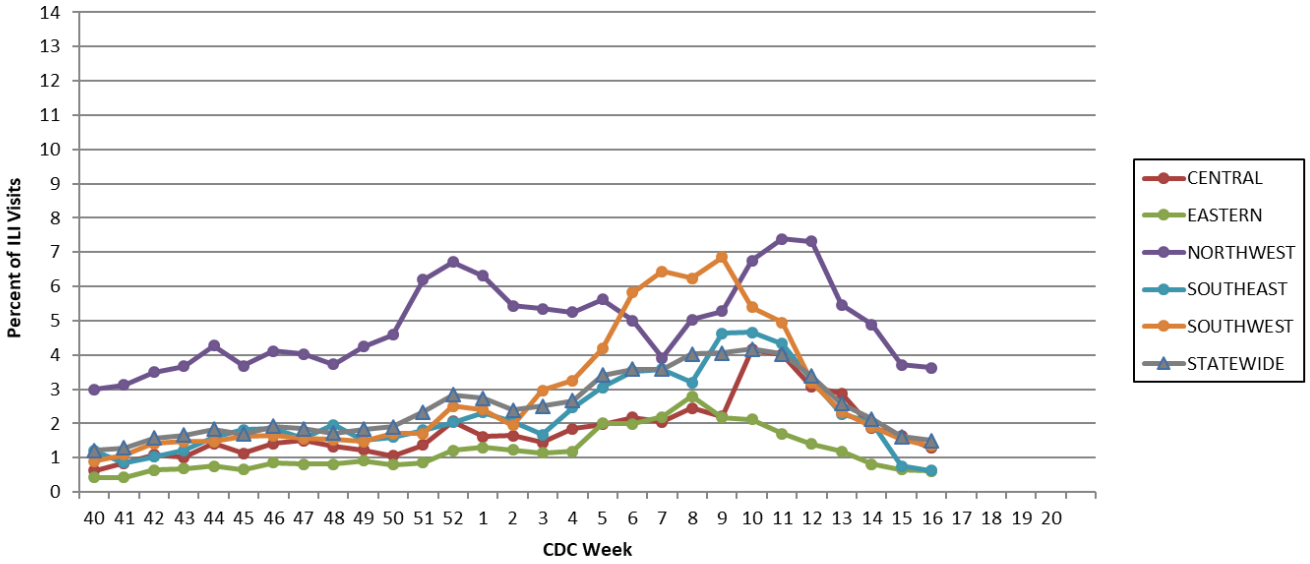
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 16, 2019*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
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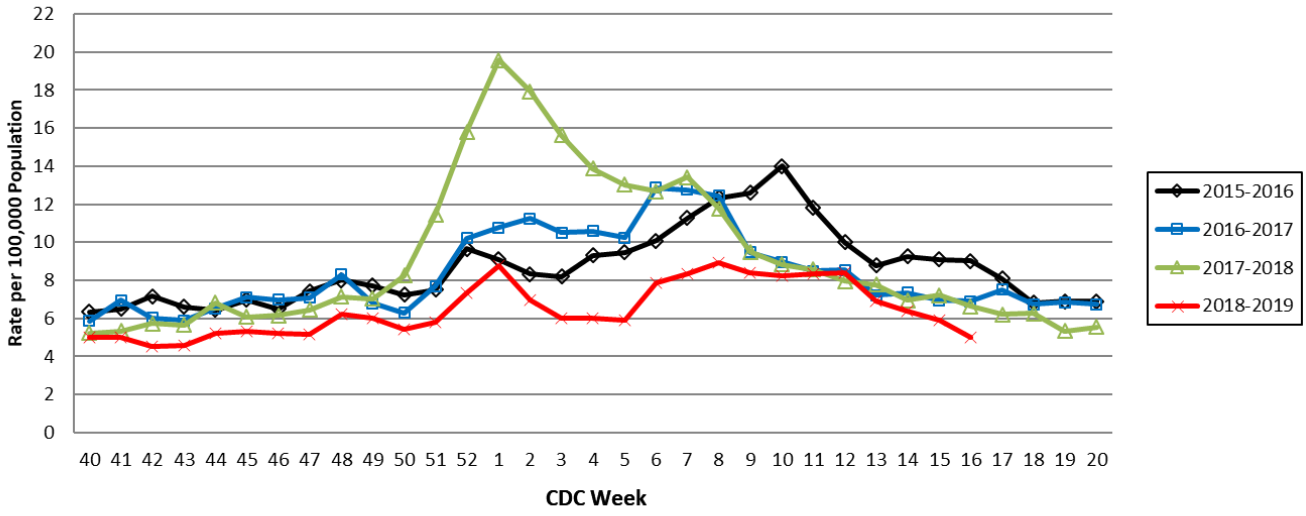
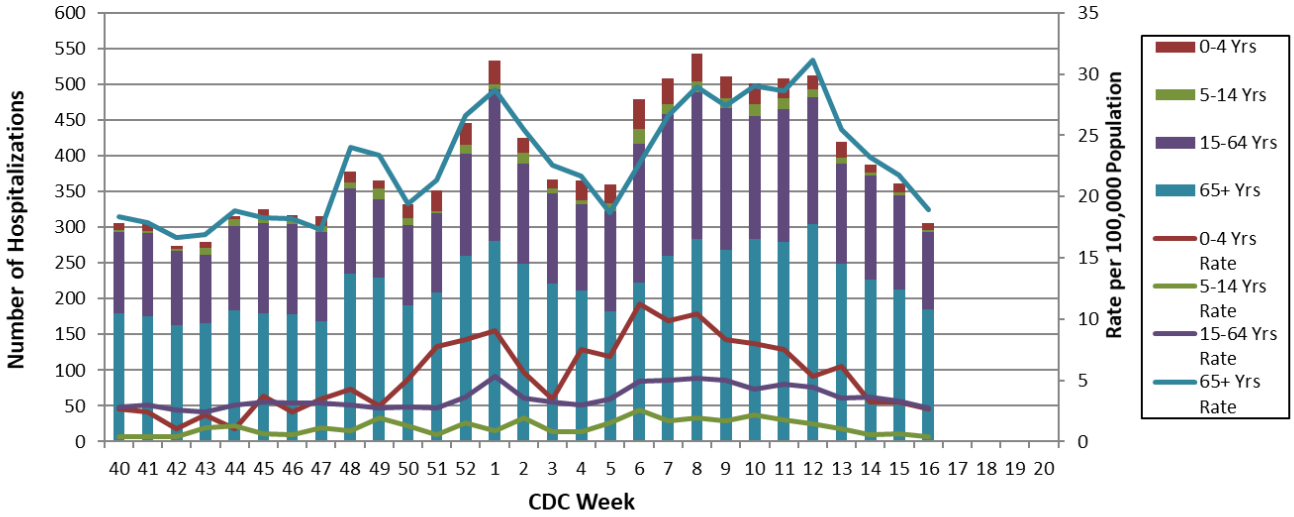
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 16, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 17: April 21, 2019 – April 27, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 17, a total of 256 laboratory-positive[3] influenza cases (206 influenza A, 48 influenza B and 2 untyped) were reported. A season-to-date total of 76,461 laboratory-positive influenza cases have been reported in Missouri as of Week 17. The influenza type for reported season-to-date cases includes 92.8% influenza A, 6.4% influenza B and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 17. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 17 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.11% (Figure 5) and 1.31% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 88 influenza-associated deaths have been reported in Missouri as of Week 17.[5] During Week 16, 21 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,612 P&I associated deaths in Missouri.[6]

- A season-to-date total of 24 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 17.

- Influenza activity continued to decrease in the United States during Week 16. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 17**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 17**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)*

Influenza Type	Week 15	Week 16	Week 17	2018-2019* Season-to-Date
Influenza A	1,051	428	206	70,927
Influenza B	119	62	48	4,951
Influenza Unknown Or Untyped	4	0	2	583
Total	1,174	490	256	76,461

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)*‡

Age Group	Week 17 Cases	Week 17 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	43	11.49	14,553	3,887.43
05-24	101	6.29	32,844	2,046.97
25-49	45	2.35	14,733	769.95
50-64	28	2.26	7,719	624.33
65+	39	4.08	6,612	692.41
Total	256	4.21	76,461	1,256.82

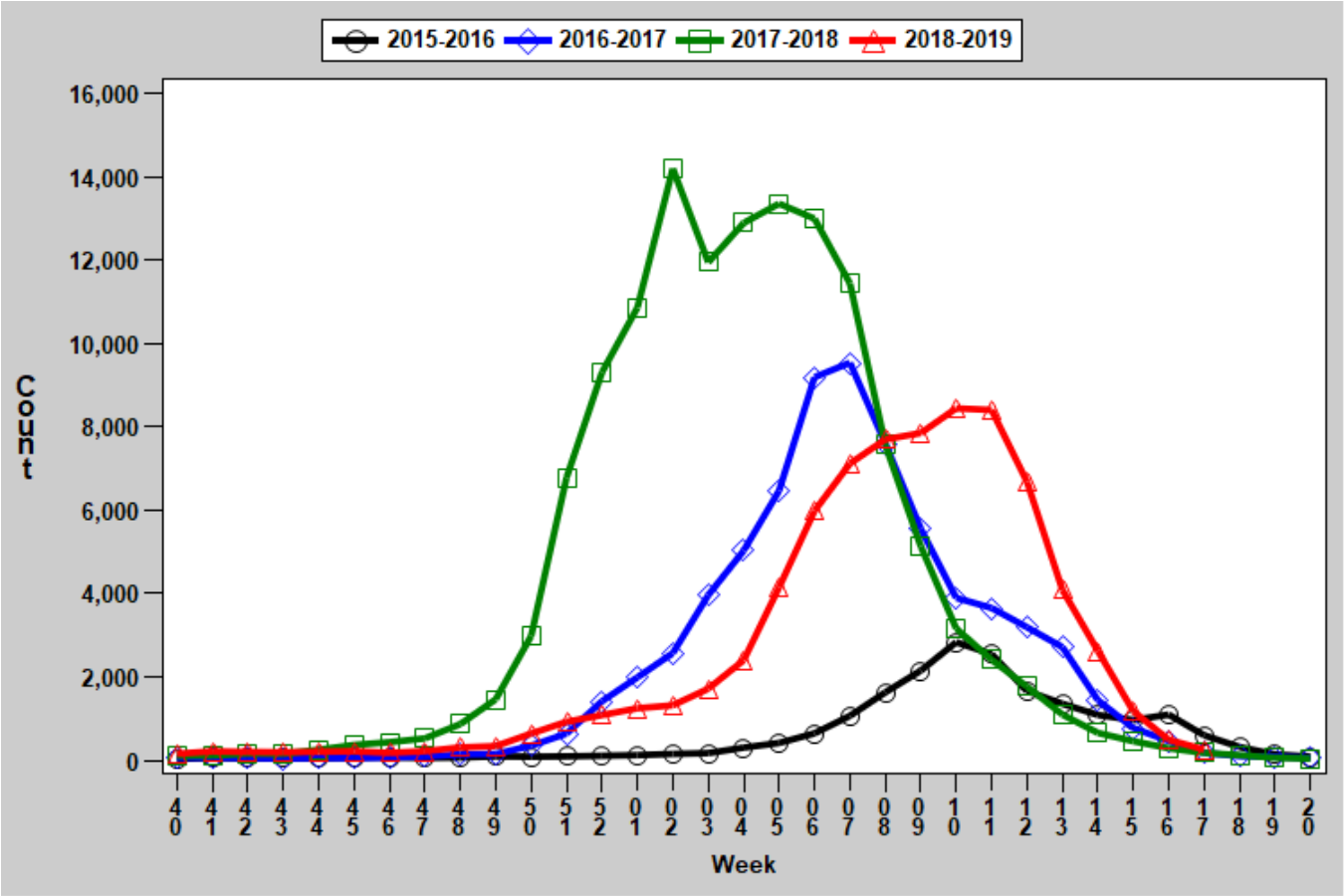
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 17 (April 21, 2019 – April 27, 2019)[*‡]

Region	Week 17 Cases	Week 17 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	46	6.79	8,777	1,296.46
Eastern	79	3.49	23,158	1,021.91
Northwest	65	4.07	16,257	1,017.64
Southeast	32	6.78	11,213	2,377.15
Southwest	34	3.17	17,056	1,592.08
Total	256	4.21	76,461	1,256.82

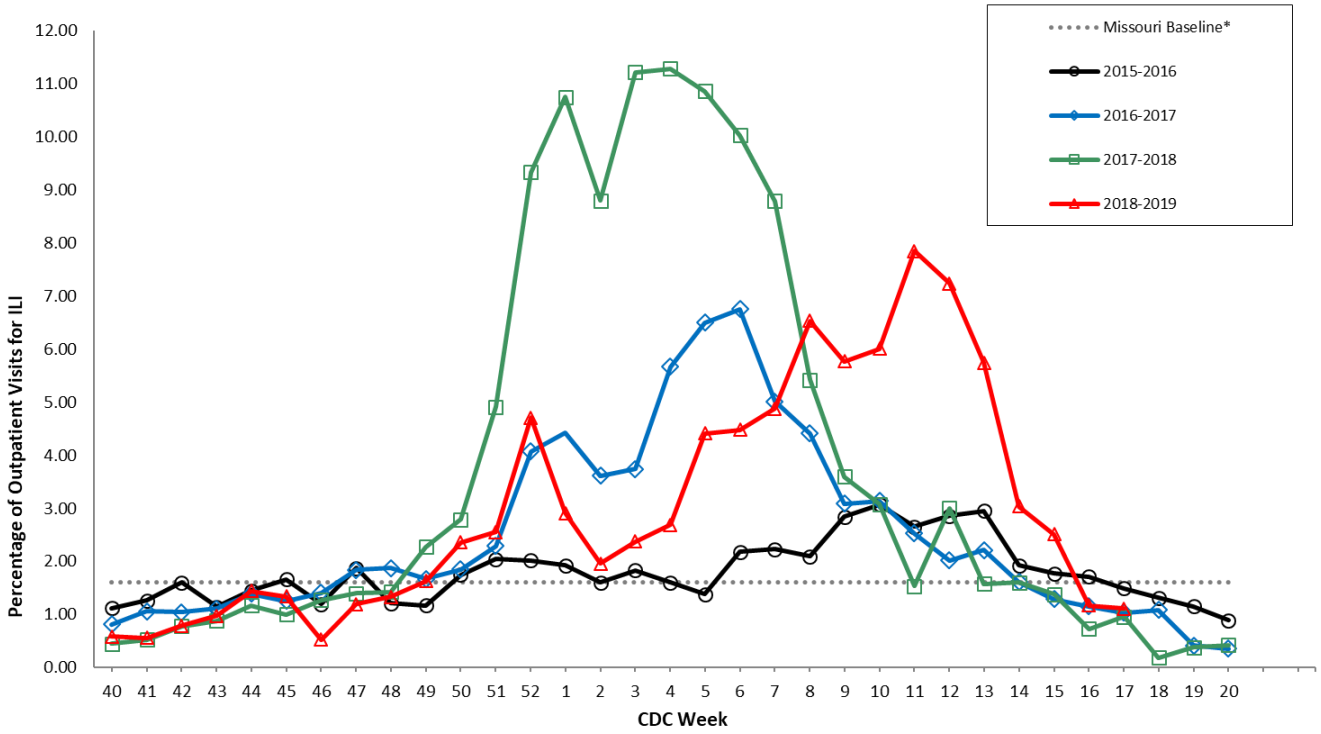
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

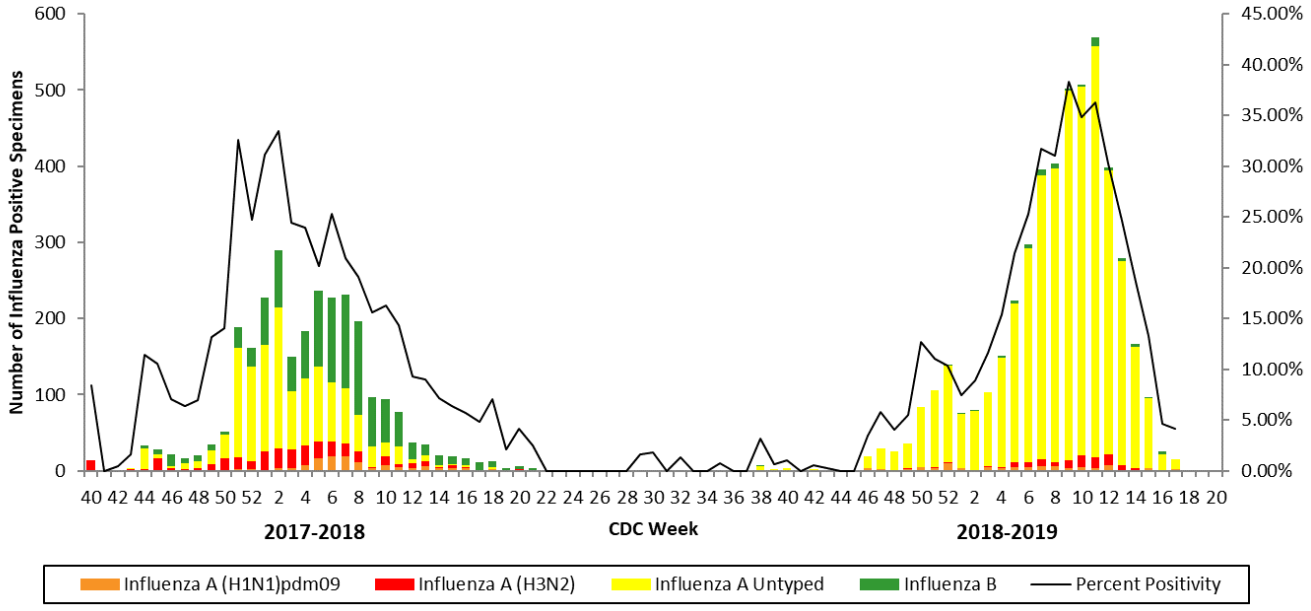
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

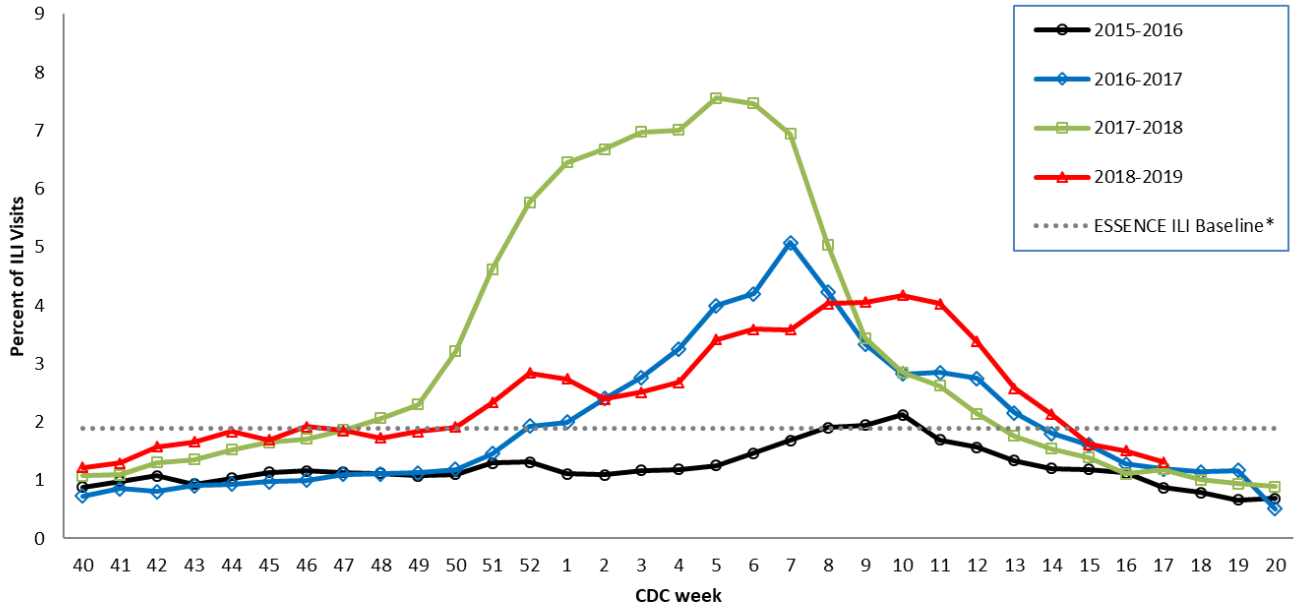
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

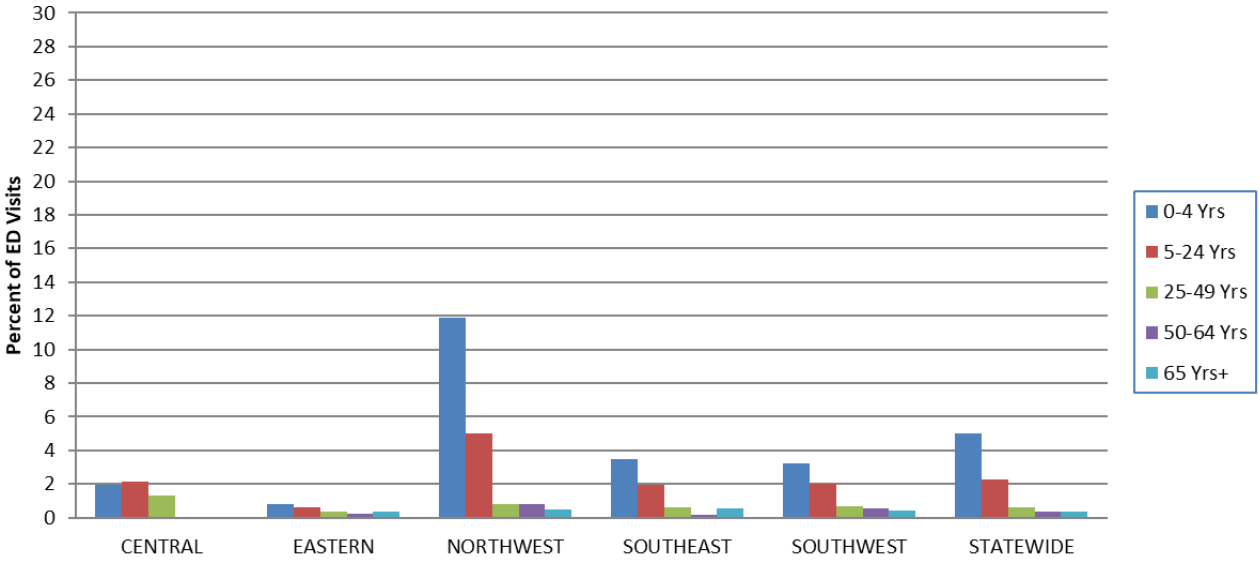
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

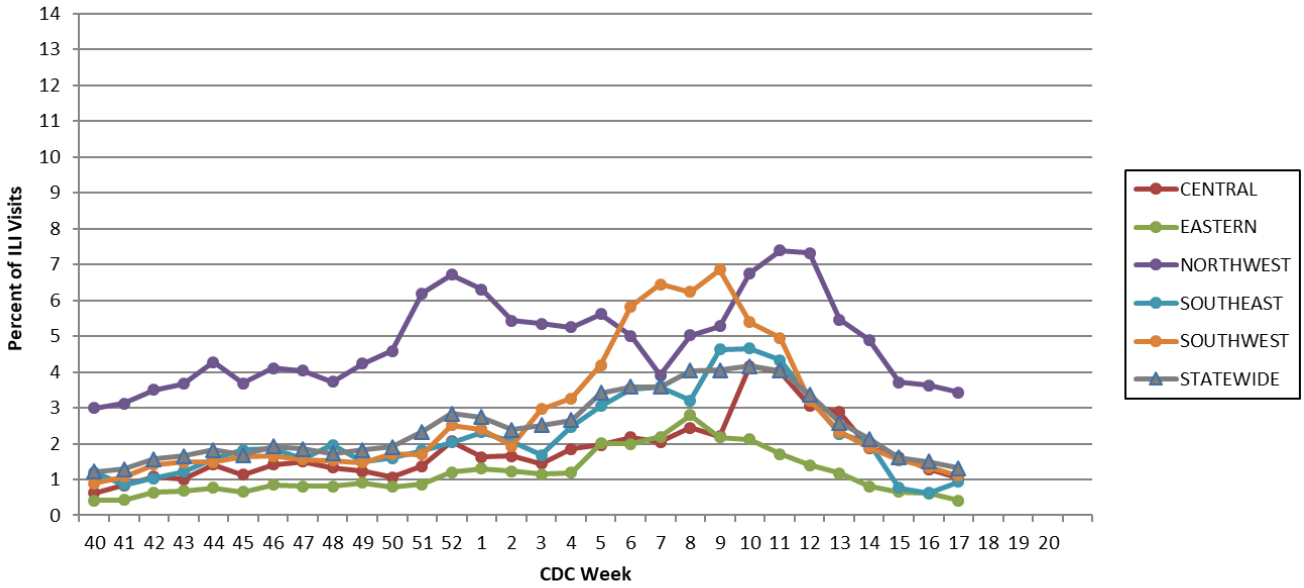
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 17, 2019*



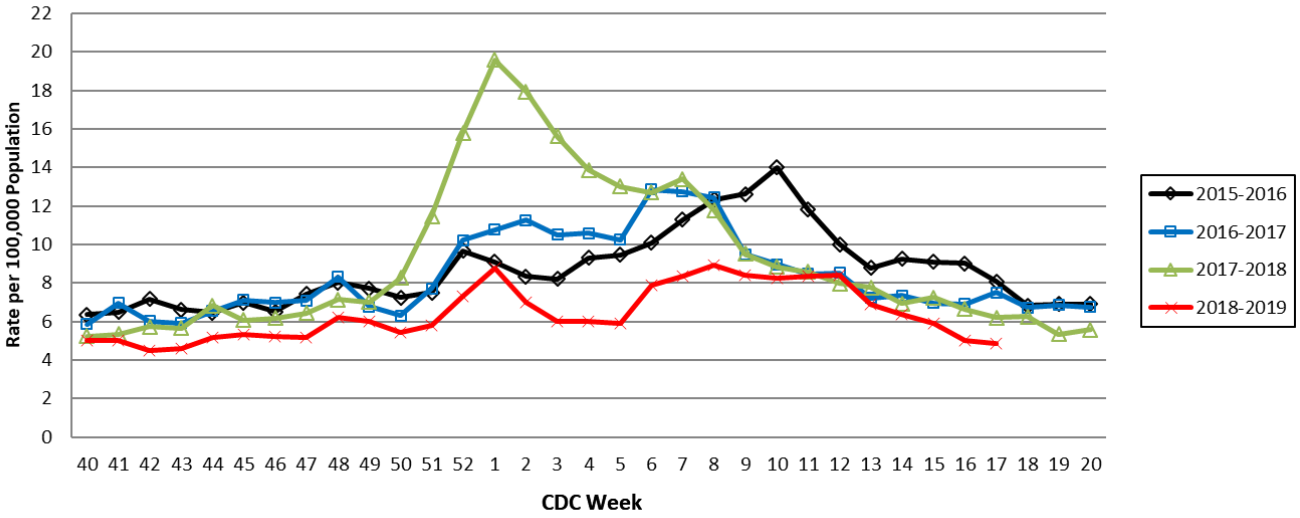
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



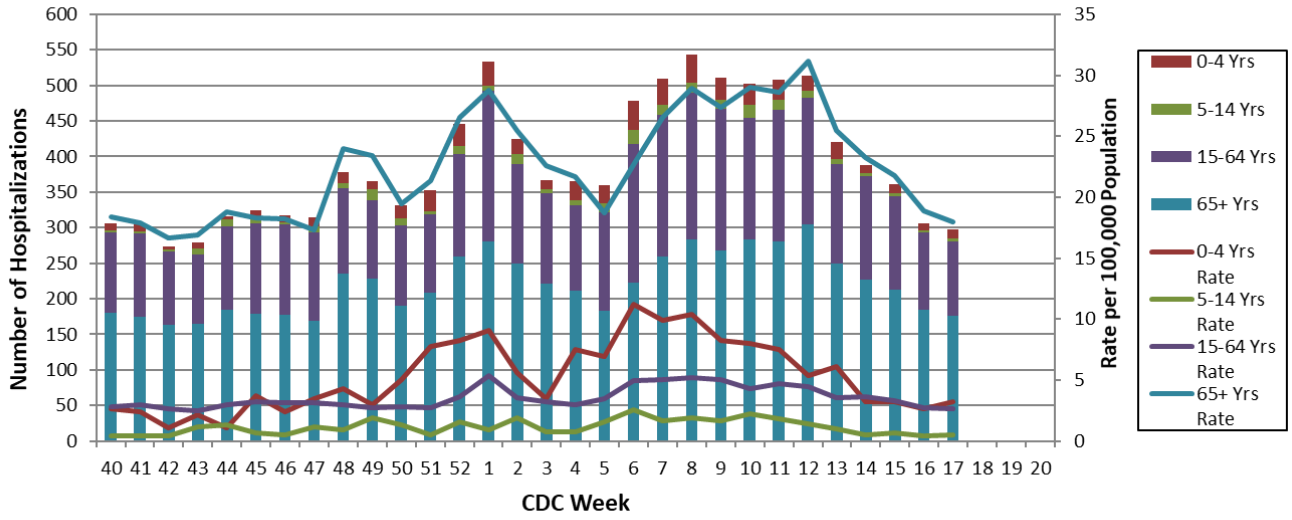
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 17, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 18: April 28, 2019 – May 4, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 18, a total of 124 laboratory-positive[3] influenza cases (94 influenza A, 26 influenza B and 4 untyped) were reported. A season-to-date total of 76,678 laboratory-positive influenza cases have been reported in Missouri as of Week 18. The influenza type for reported season-to-date cases includes 92.7% influenza A, 6.5% influenza B and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 18. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 18 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 1.15% (Figure 5) and 1.35% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 88 influenza-associated deaths have been reported in Missouri as of Week 18.[5] During Week 17, 30 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,642 P&I associated deaths in Missouri.[6]

- A season-to-date total of 24 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 18.

- Influenza activity continued to decrease in the United States during Week 17. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 18**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 18**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 18 (April 28, 2019 – May 4, 2019)*

Influenza Type	Week 16	Week 17	Week 18	2018-2019* Season-to-Date
Influenza A	438	224	94	71,102
Influenza B	66	54	26	4,989
Influenza Unknown Or Untyped	0	2	4	587
Total	504	280	124	76,678

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 18 (April 28, 2019 – May 4, 2019)*‡

Age Group	Week 18 Cases	Week 18 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	31	8.28	14,592	3,897.85
05-24	28	1.75	32,913	2,051.27
25-49	26	1.36	14,779	772.35
50-64	16	1.29	7,749	626.75
65+	23	2.41	6,645	695.87
Total	124	2.04	76,678	1,260.39

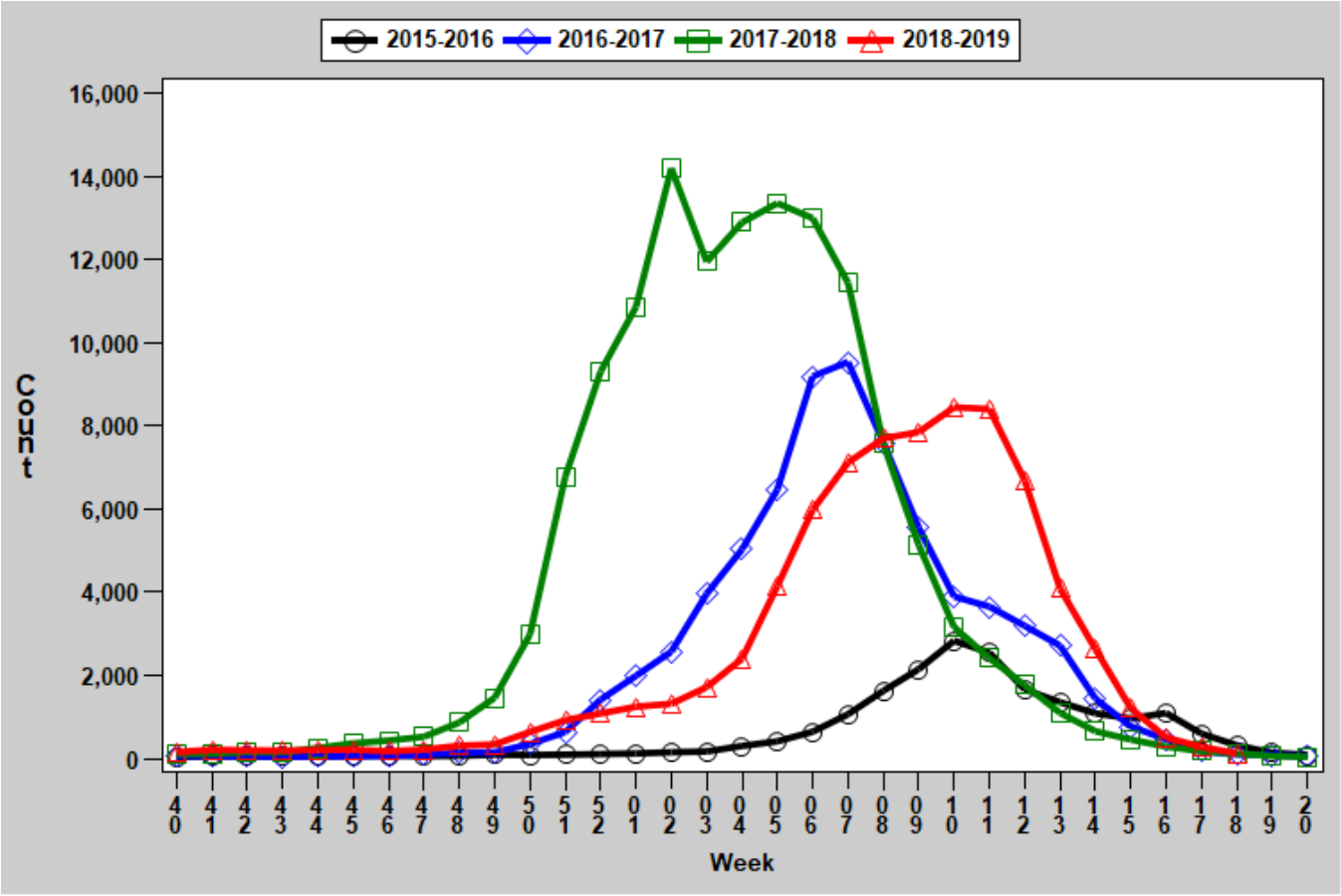
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 18 (April 28, 2019 – May 4, 2019)[*‡]

Region	Week 18 Cases	Week 18 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	25	3.69	8,817	1,302.37
Eastern	29	1.28	23,196	1,023.58
Northwest	20	1.25	16,332	1,022.33
Southeast	44	9.33	11,266	2,388.39
Southwest	6	0.56	17,067	1,593.11
Total	124	2.04	76,678	1,260.39

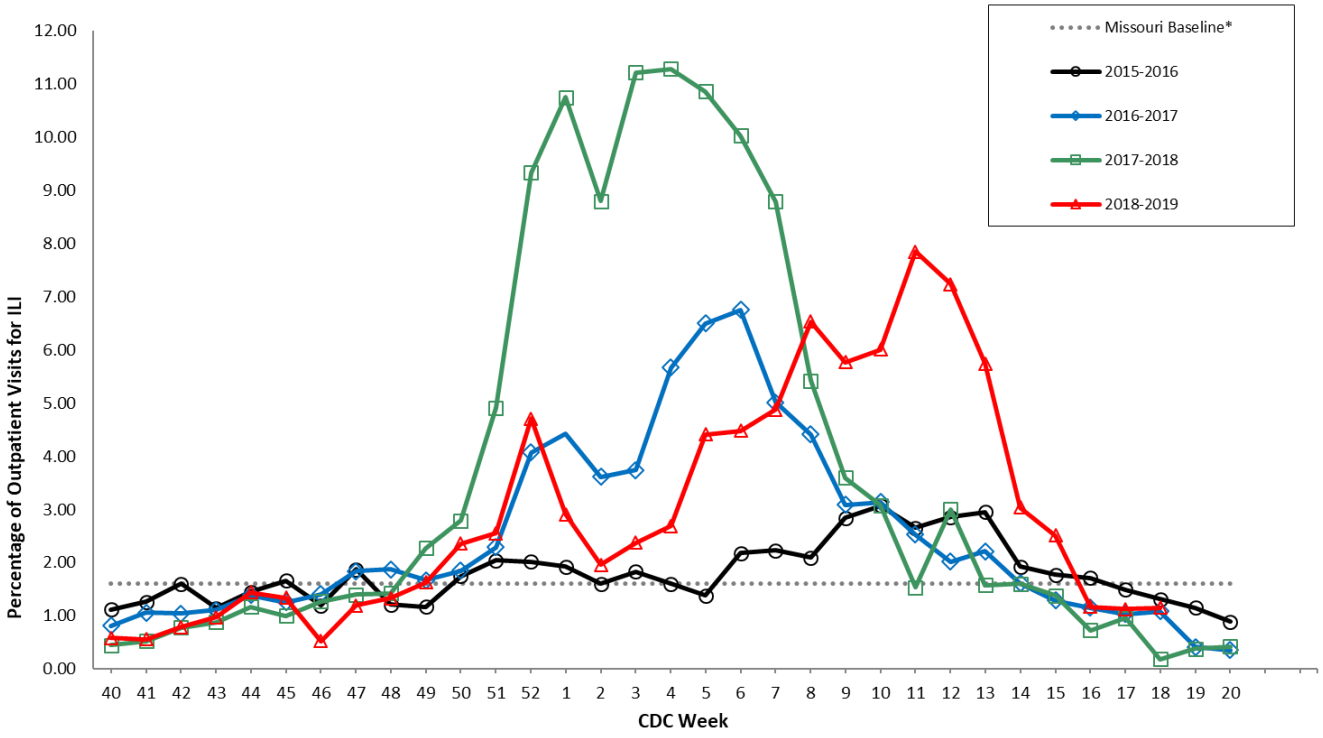
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

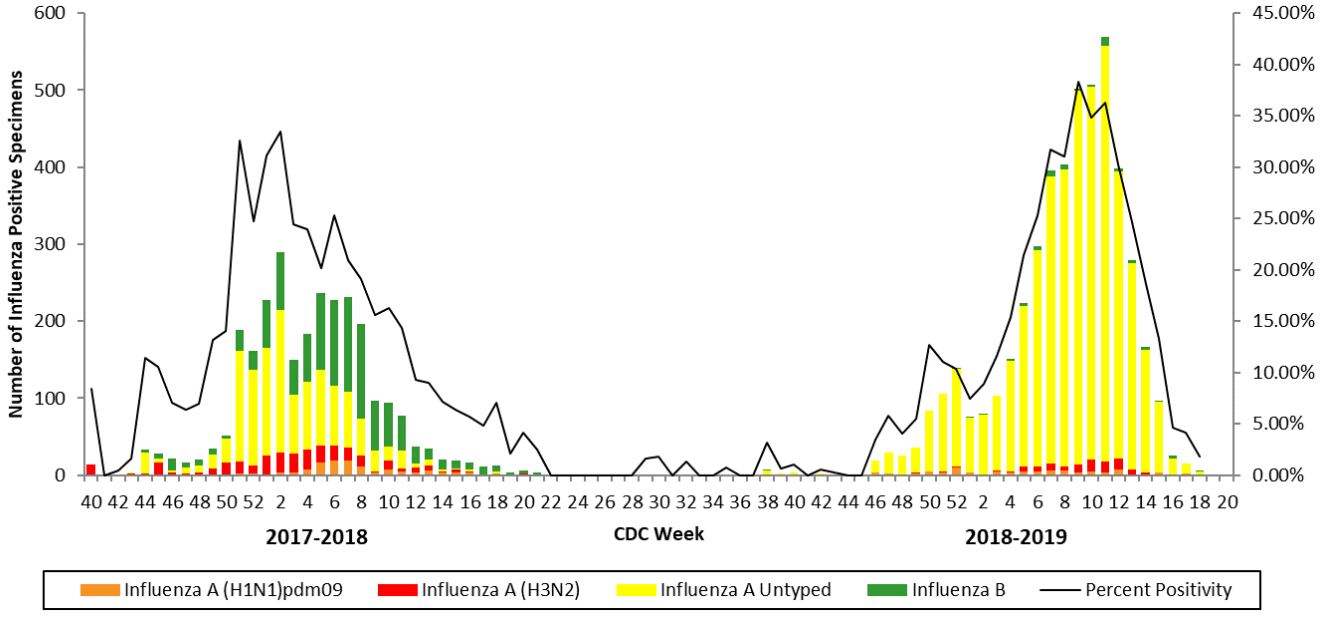
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

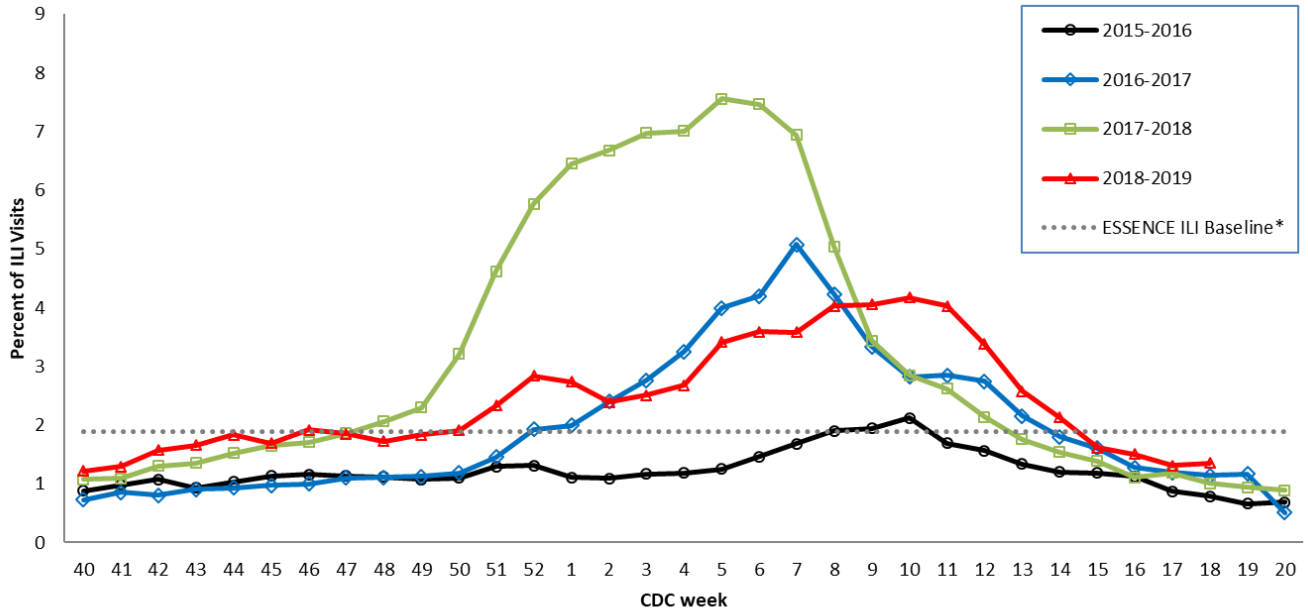
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

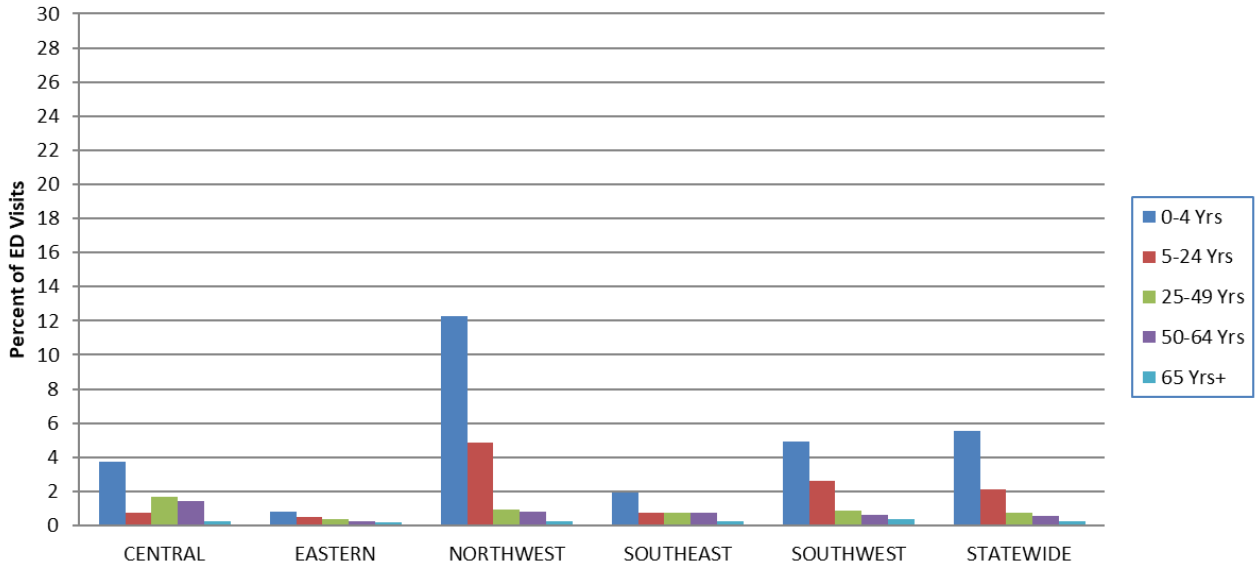
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

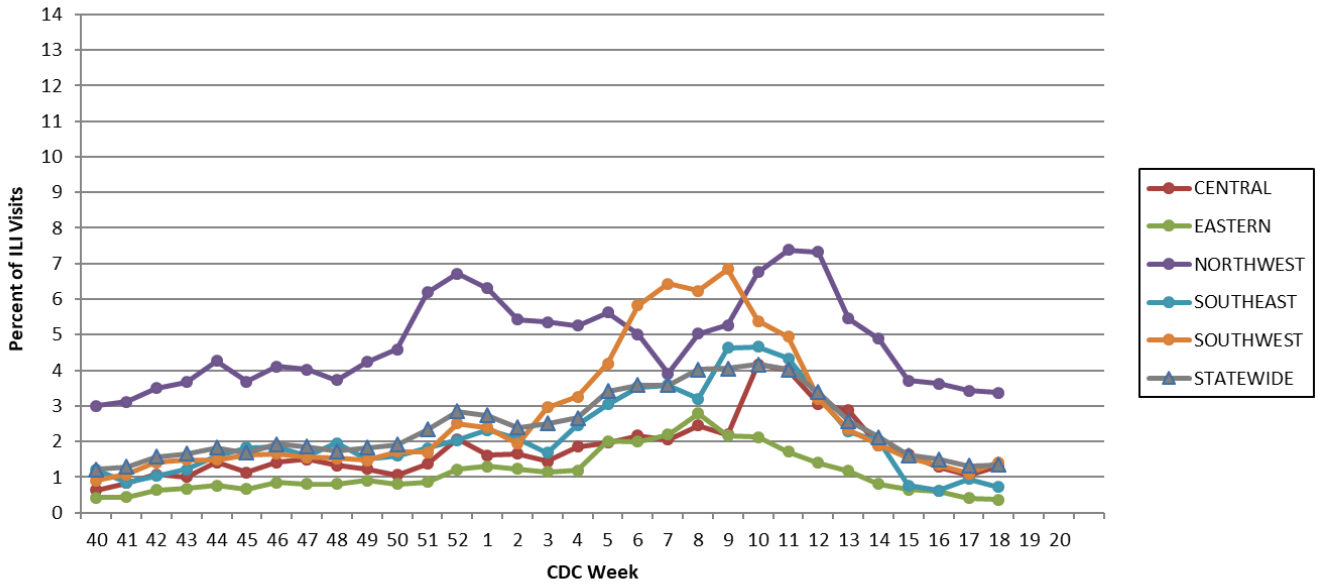
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 18, 2019*



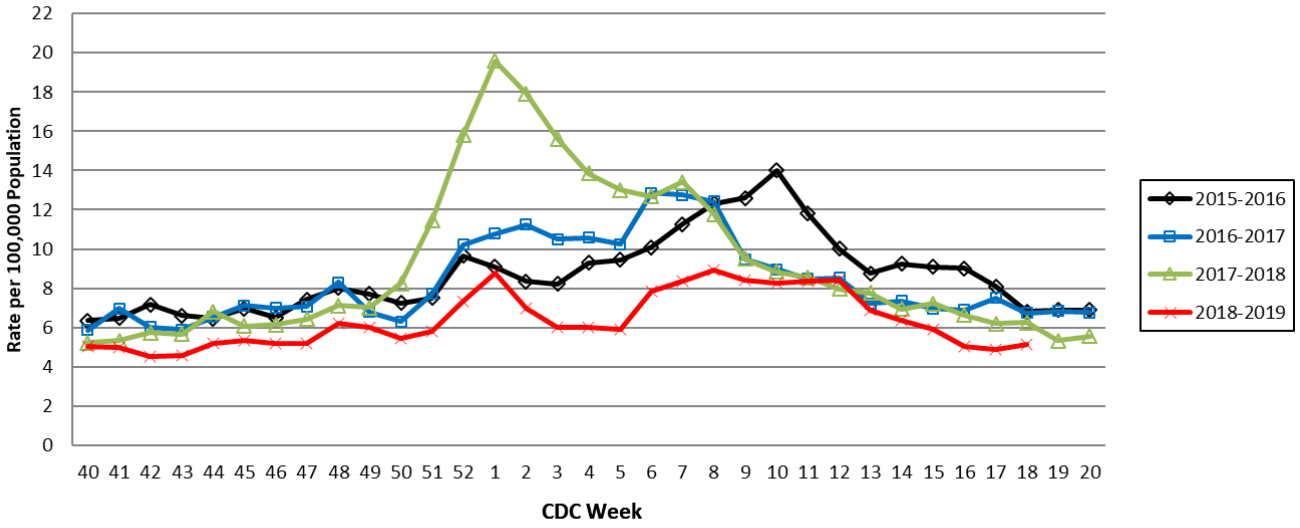
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



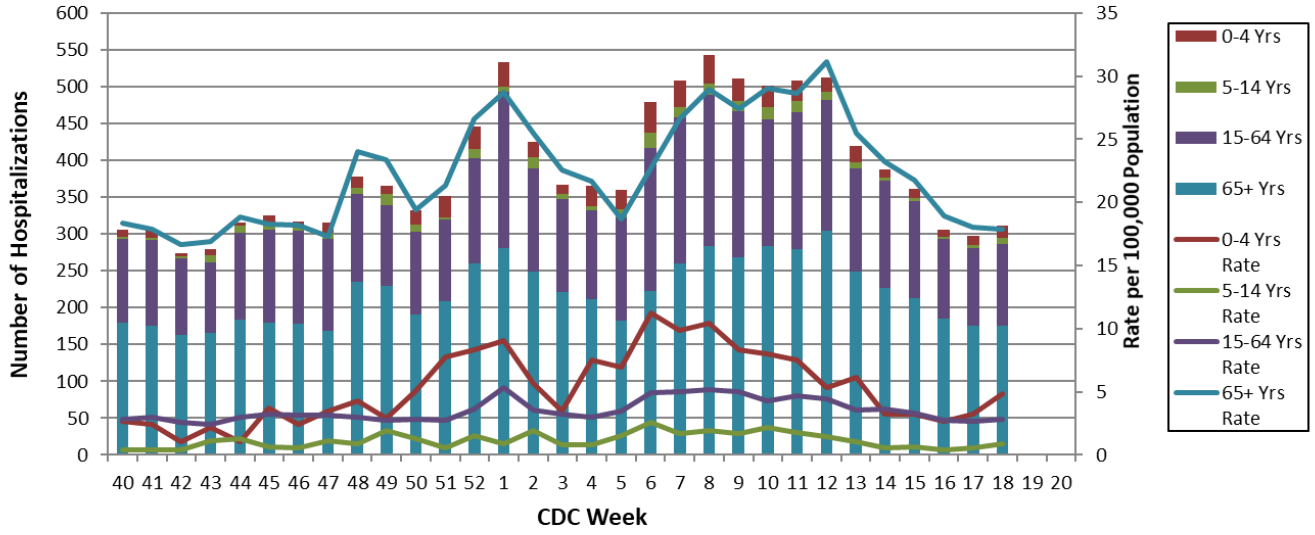
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 18, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 19: May 5, 2019 – May 11, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 19, a total of 74 laboratory-positive[3] influenza cases (57 influenza A, 16 influenza B and 1 untyped) were reported. A season-to-date total of 76,808 laboratory-positive influenza cases have been reported in Missouri as of Week 19. The influenza type for reported season-to-date cases includes 92.7% influenza A, 6.5% influenza B and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 19. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 19 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.71% (Figure 5) and 1.2% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 89 influenza-associated deaths have been reported in Missouri as of Week 19.[5] During Week 19, 40 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,682 P&I associated deaths in Missouri.[6]

- A season-to-date total of 25 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 19.

- Influenza activity continued to decrease in the United States during Week 18. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 19**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 19**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 19 (May 5, 2019 – May 11, 2019)*

Influenza Type	Week 17	Week 18	Week 19	2018-2019* Season-to-Date
Influenza A	229	120	57	71,201
Influenza B	58	35	16	5,019
Influenza Unknown Or Untyped	2	4	1	588
Total	289	159	74	76,808

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 19 (May 5, 2019 – May 11, 2019)*‡

Age Group	Week 19 Cases	Week 19 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	16	4.27	14,619	3,905.06
05-24	18	1.12	32,949	2,053.52
25-49	21	1.10	14,814	774.18
50-64	9	0.73	7,767	628.21
65+	10	1.05	6,659	697.33
Total	74	1.22	76,808	1,262.53

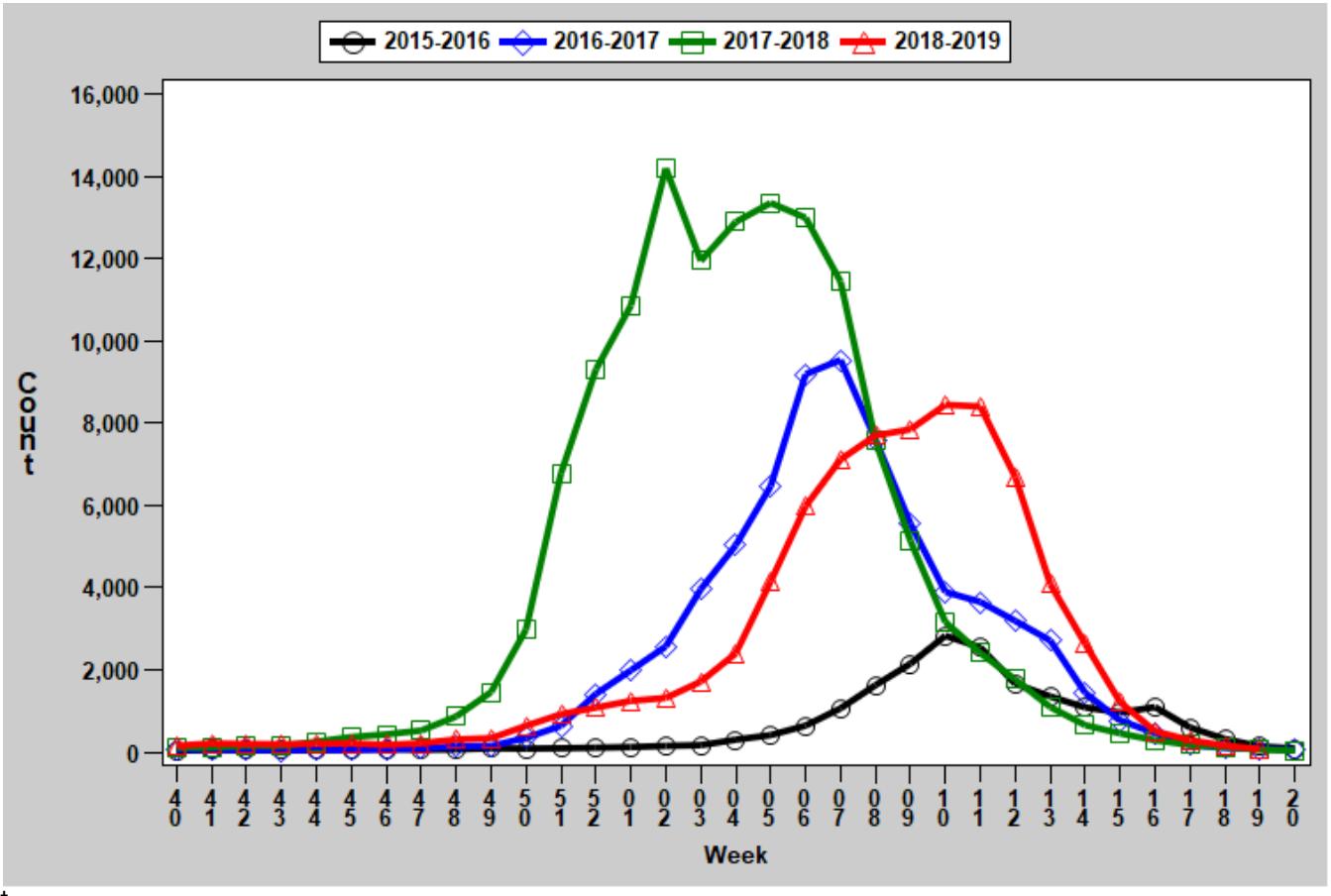
†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 19 (May 5, 2019 – May 11, 2019)[*‡]

Region	Week 19 Cases	Week 19 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	32	4.73	8,854	1,307.83
Eastern	15	0.66	23,221	1,024.69
Northwest	11	0.69	16,360	1,024.09
Southeast	11	2.33	11,295	2,394.54
Southwest	5	0.47	17,078	1,594.14
Total	74	1.22	76,808	1,262.53

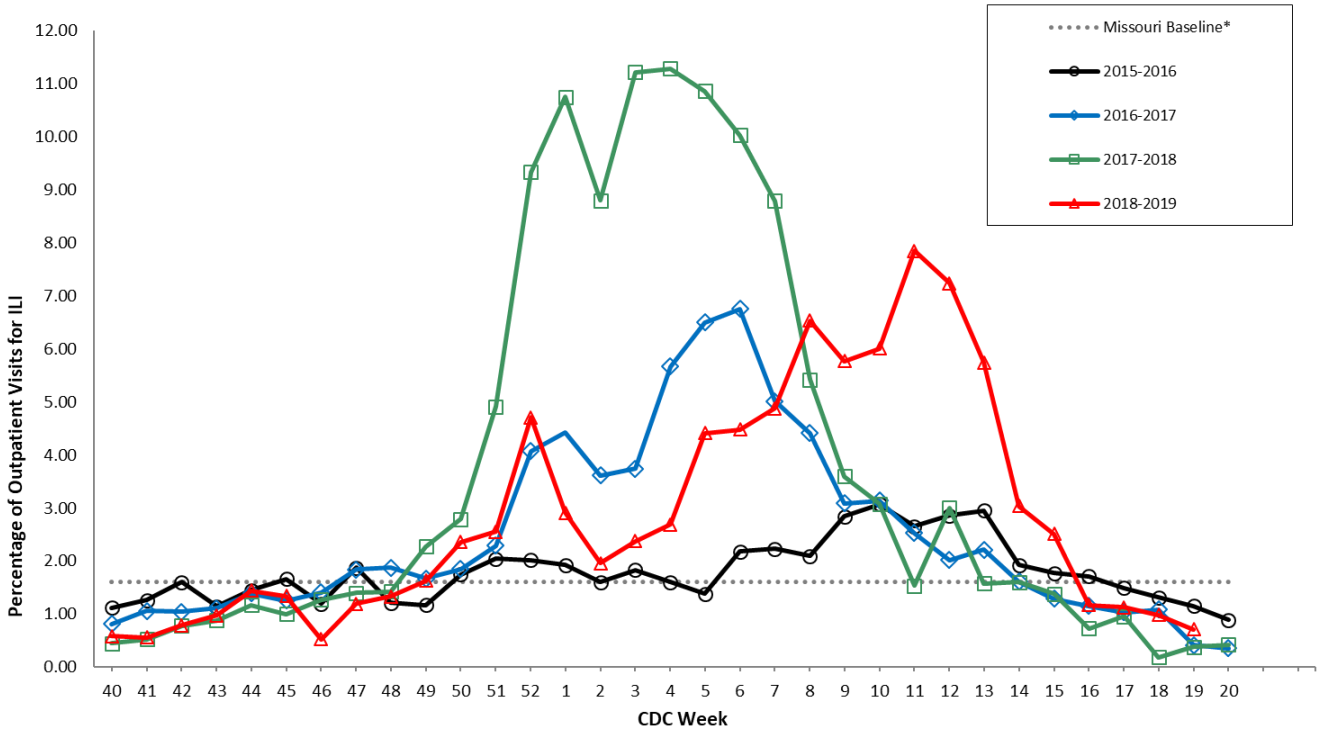
[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

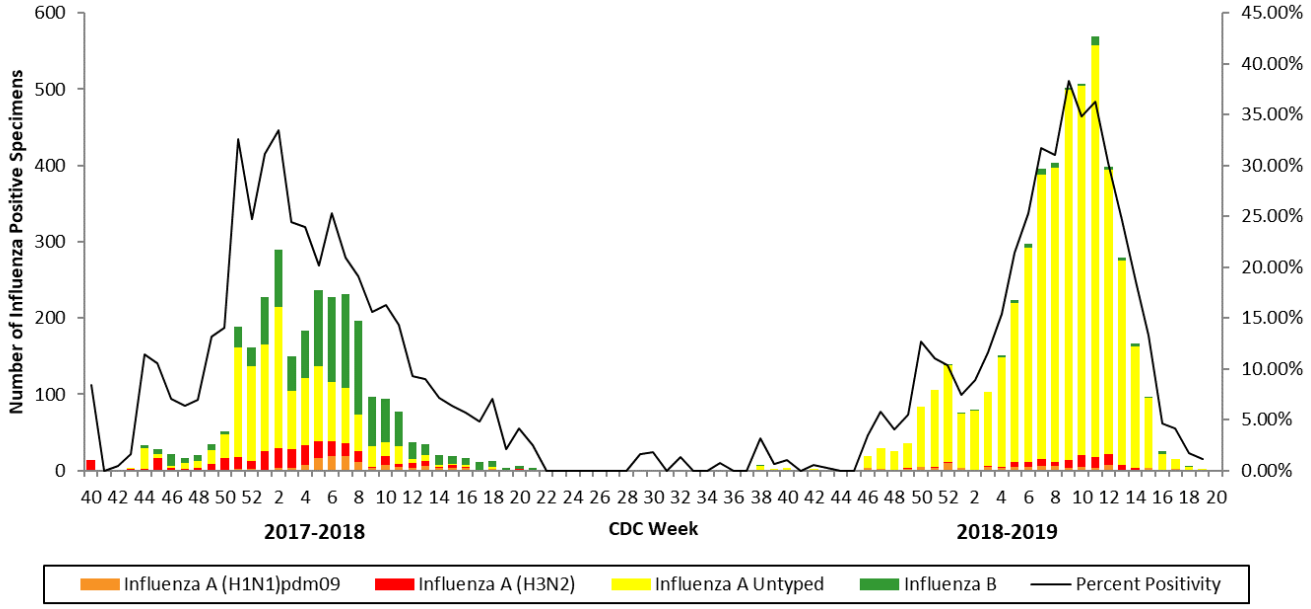
Figure 5. Percentage of Outpatient Visits for Influenza-like Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2015-2019*†



*The ILINet Region 7 (MO, IA, KS, NE) baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons, plus two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza. Data Source: U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Centers for Disease Control and Prevention (CDC).

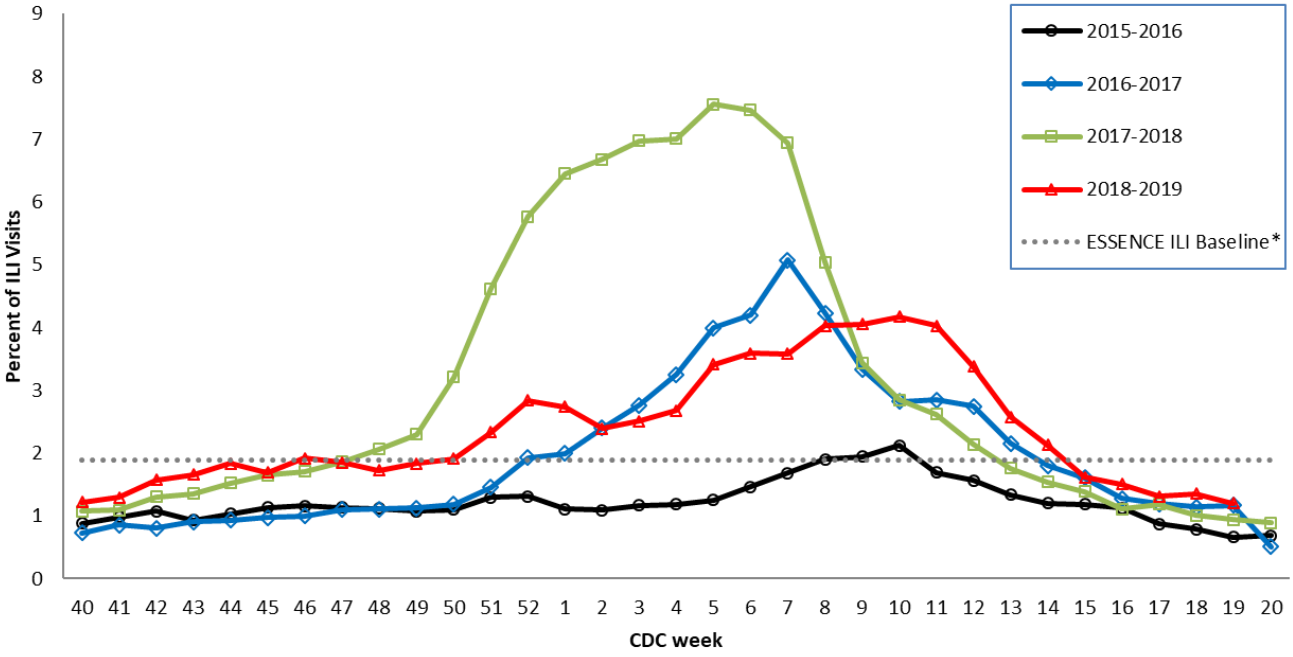
†2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC). 2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

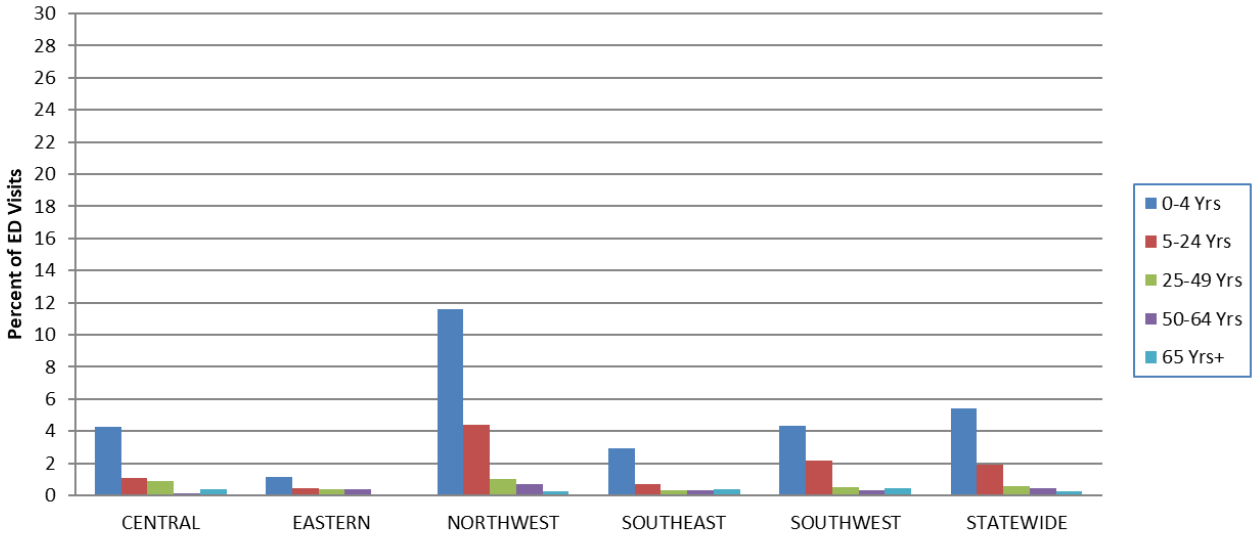
Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

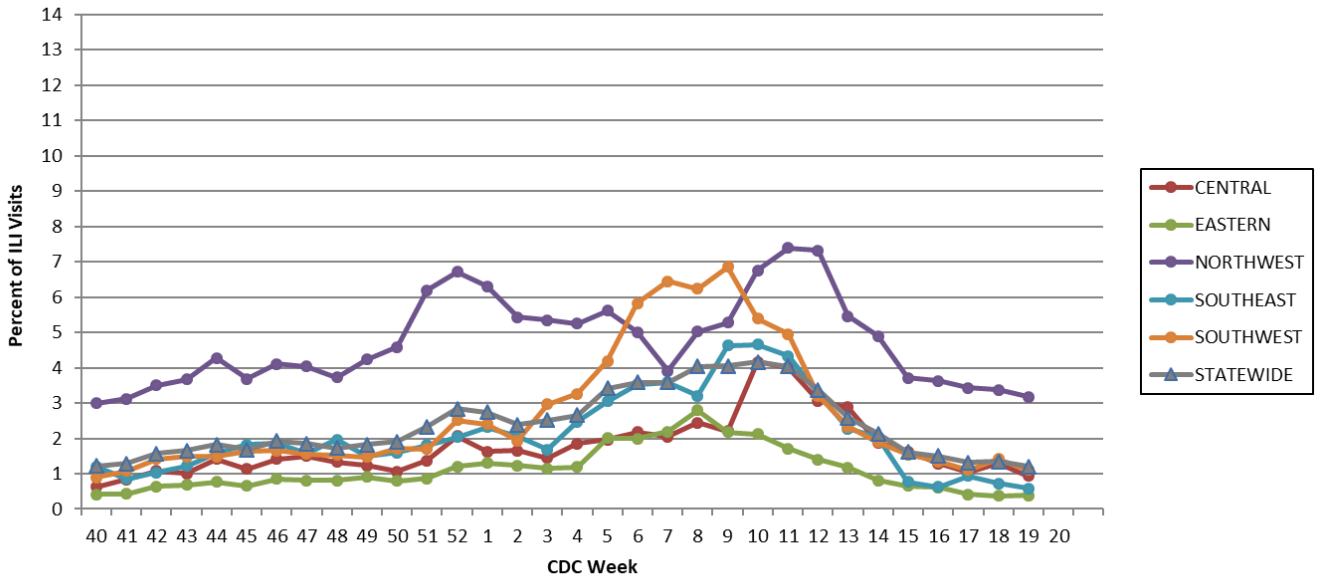
‡The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 8. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Age Group, Region and Statewide, Week 19, 2019*



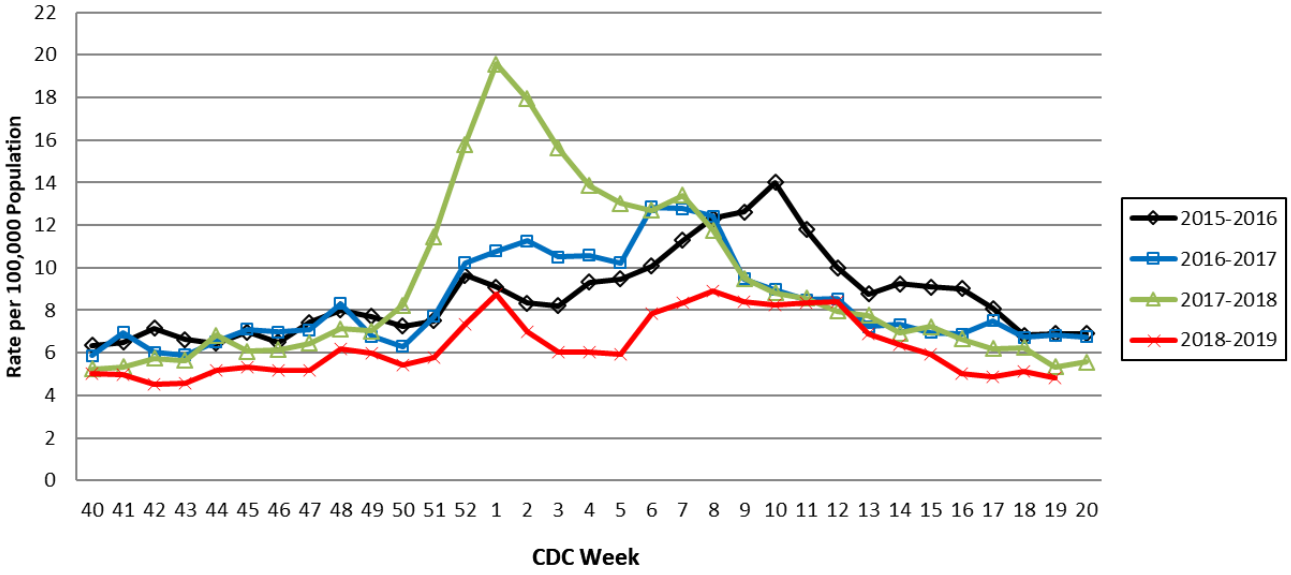
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 9. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, by Region and Statewide, 2018-2019 Influenza Season*



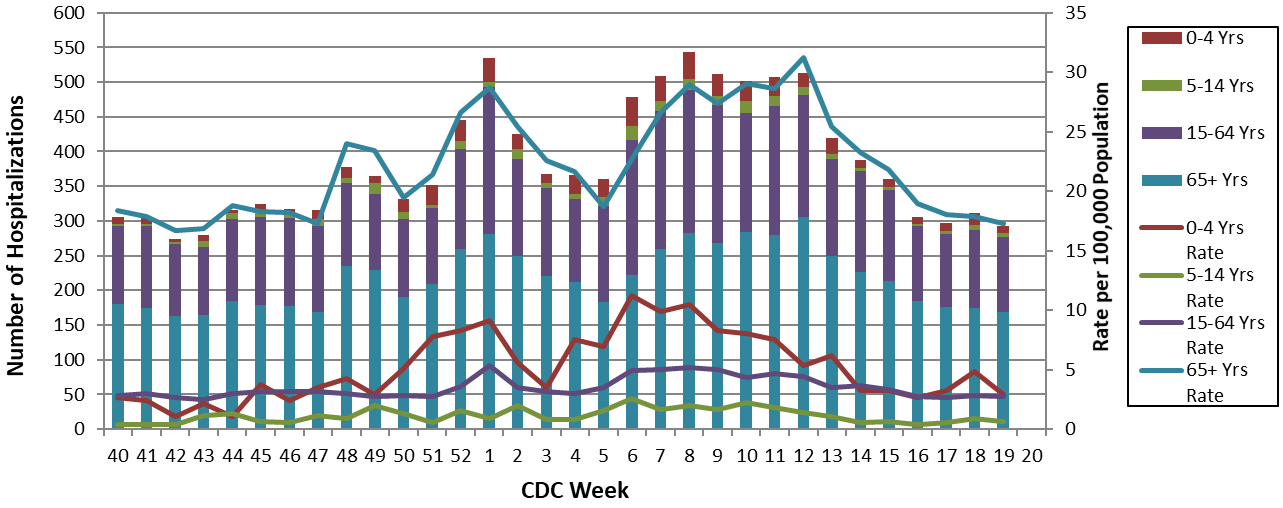
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.
*The ILI data from a small number of sites located in the Northwest Region of the state is temporarily unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 19, 2018-2019 Influenza Season



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, HL7 Messaging Portal.

Additional Influenza Data Sources:

Centers for Disease Control and Prevention: National Influenza Surveillance (FluView):
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

The National Respiratory and Enteric Virus Surveillance System (NREVSS):
https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/

Missouri Weekly Influenza Surveillance Report
2018-2019 Influenza Season[1]

Week 20: May 12, 2019 – May 18, 2019

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Sporadic[2].

- During Week 20, a total of 40 laboratory-positive[3] influenza cases (26 influenza A, 13 influenza B and 1 untyped) were reported. A season-to-date total of 76,863 laboratory-positive influenza cases have been reported in Missouri as of Week 20. The influenza type for reported season-to-date cases includes 92.7% influenza A, 6.5% influenza B and 0.8% untyped. No laboratory-positive cases of influenza were reported by the Missouri State Public Health Laboratory (MSPHL) during Week 20. The number of specimens testing positive for influenza in Missouri laboratories reporting to the National Respiratory and Enteric Virus Surveillance System (NREVSS) decreased during Week 20 (Figure 6).

- Influenza-like illness (ILI) activity was below baseline for the Missouri Outpatient ILI Surveillance Network (ILINet) and for the hospital emergency room visit chief complaint data reported through ESSENCE. The reported percentage of visits for ILI was 0.26% (Figure 5) and 1.18% (Figure 7) through ILINet and ESSENCE respectively.[4] The ILI data from a small number of sites located in the Northwest Region of the state is currently unavailable in ESSENCE. Therefore, the ILI data for the Northwest Region should be interpreted with caution.

- A season-to-date total of 92 influenza-associated deaths have been reported in Missouri as of Week 20.[5] During Week 19, 39 deaths involving Pneumonia and Influenza (P&I) were reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,721 P&I associated deaths in Missouri.[6]

- A season-to-date total of 25 influenza outbreaks and 12 influenza or ILI-associated school closures have been reported in Missouri as of Week 20.

- Influenza activity continued to decrease in the United States during Week 19. National influenza surveillance information is prepared by CDC and is included in the weekly FluView report, which is available online at http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

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[1]The 2018-2019 influenza season begins CDC Week 40 (week ending October 6, 2018) and ends CDC Week 39 (week ending September 28, 2019).

[2]Sporadic is defined as: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

[3]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

[4]Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100ºF [37.8ºC] or greater) and a cough and/or a sore throat without a known cause other than influenza. ILI is defined by ESSENCE as Emergency Department chief complaints for Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers).

[5]All influenza-associated deaths became reportable in Missouri in 2016.

[6]The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The jurisdiction-specific influenza data are provided though interactive maps available at http://bit.ly/MoFluMaps. *Click on the jurisdiction to view the influenza data specific to that jurisdiction.*

- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, CDC Week 20**
- **Reported Week-specific Rate per 100,000 Population, CDC Week 20**
- **Reported Laboratory-positive Influenza Cases by Influenza Type by Jurisdiction, Season-to-Date**
- **Reported Rate per 100,000 Population, Season-to-Date**

Data Figures

Figure 1. Number of Laboratory-positive† Influenza Cases by Influenza Type, Missouri, CDC Week 20 (May 12, 2019 – May 18, 2019)*

Influenza Type	Week 18	Week 19	Week 20	2018-2019* Season-to-Date
Influenza A	122	65	26	71,237
Influenza B	36	19	13	5,036
Influenza Unknown Or Untyped	4	1	1	590
Total	162	85	40	76,863

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Figure 2. Number of Laboratory-positive† Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 20 (May 12, 2019 – May 18, 2019)*‡

Age Group	Week 20 Cases	Week 20 Rate‡	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate‡
00-04	6	1.60	14,627	3,907.20
05-24	12	0.75	32,964	2,054.45
25-49	8	0.42	14,824	774.71
50-64	7	0.57	7,780	629.26
65+	7	0.73	6,668	698.28
Total	40	0.66	76,863	1,263.43

†Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
*Influenza season begins week ending October 6, 2018 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
‡Incidence Rate per 100,000 population

Figure 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 20 (May 12, 2019 – May 18, 2019)[*‡]

Region	Week 20 Cases	Week 20 Rate[‡]	2018-2019* Season-to-Date	2018-2019* Season-to-Date Rate[‡]
Central	12	1.77	8,867	1,309.75
Eastern	19	0.84	23,241	1,025.57
Northwest	2	0.13	16,366	1,024.46
Southeast	6	1.27	11,309	2,397.50
Southwest	1	0.09	17,080	1,594.32
Total	40	0.66	76,863	1,263.43

[†]Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
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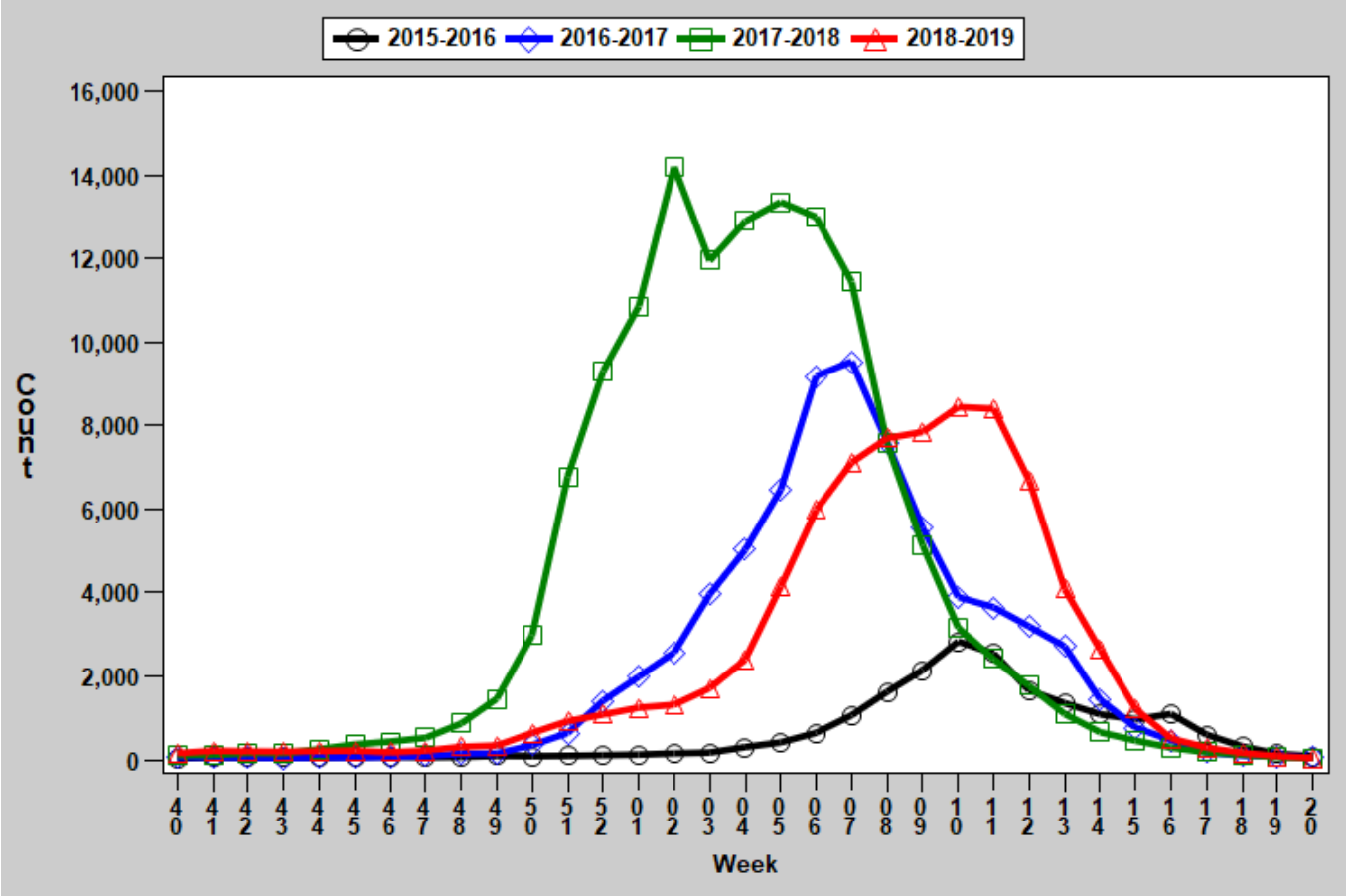
[‡]Incidence Rate per 100,000 population

Figure 4. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2015-2019[*]



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[*]2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).Data Source: Missouri Health Information Surveillance System (WebSurv).

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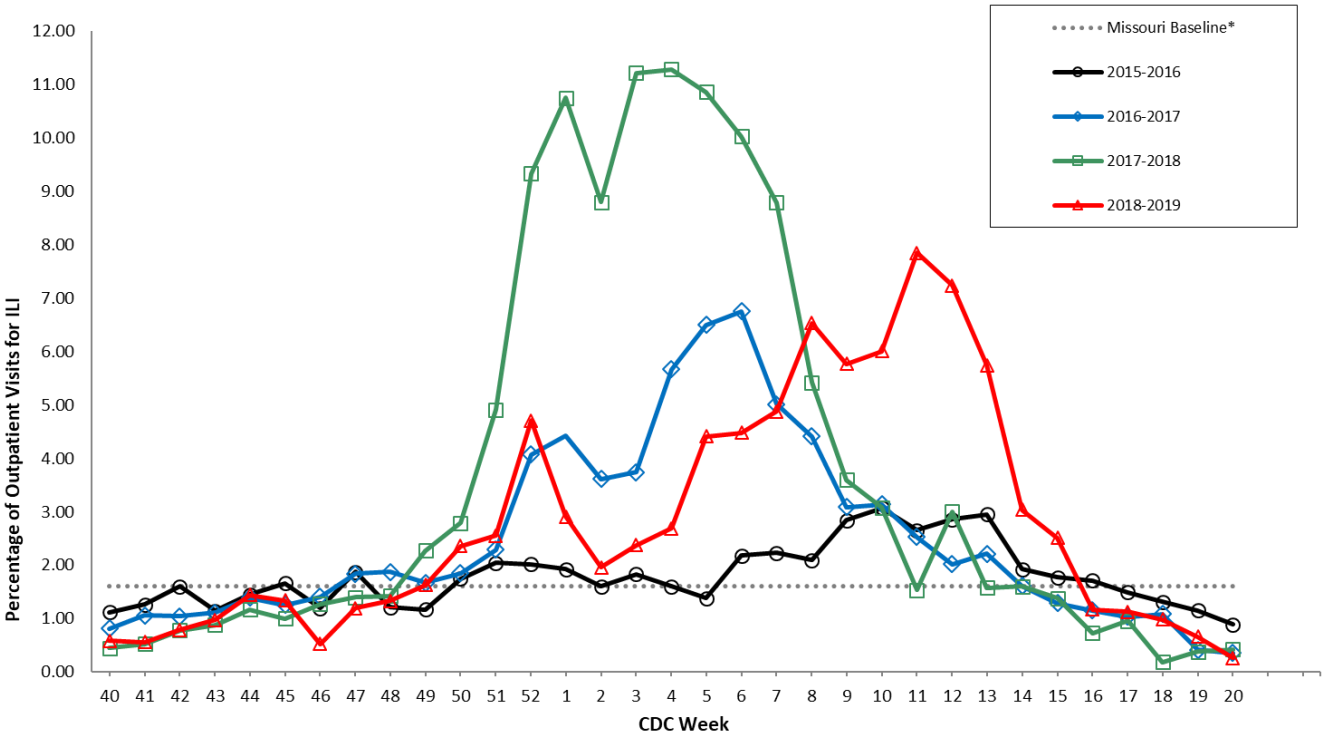

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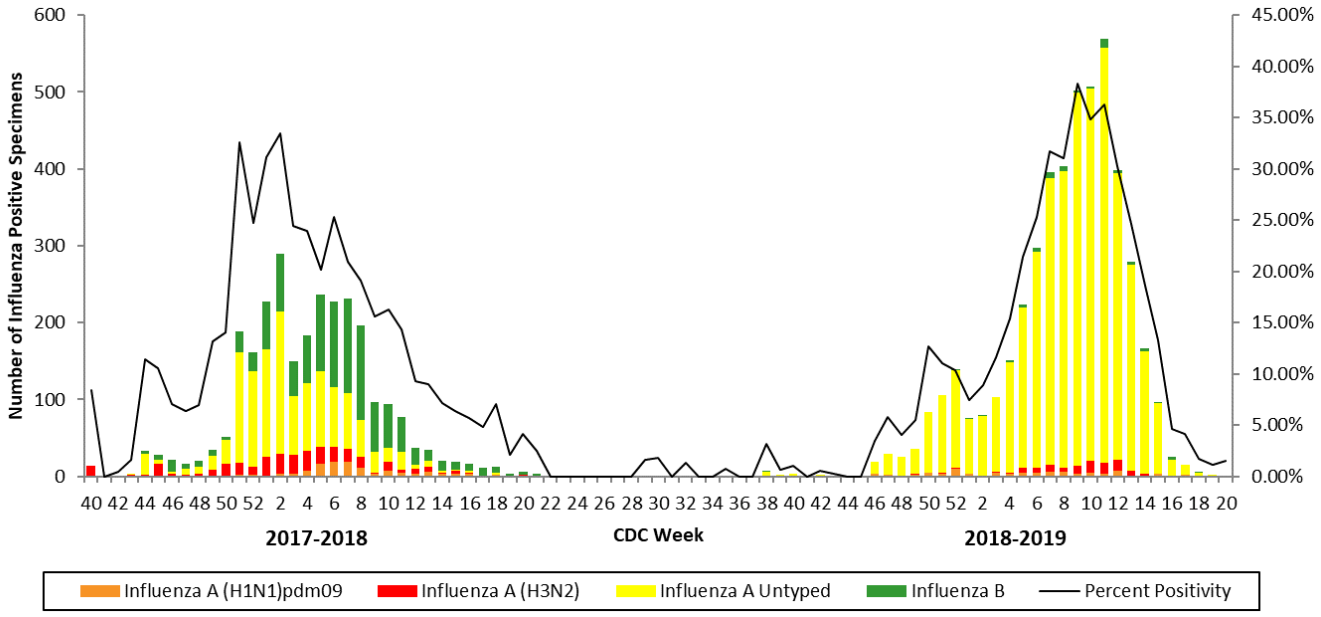
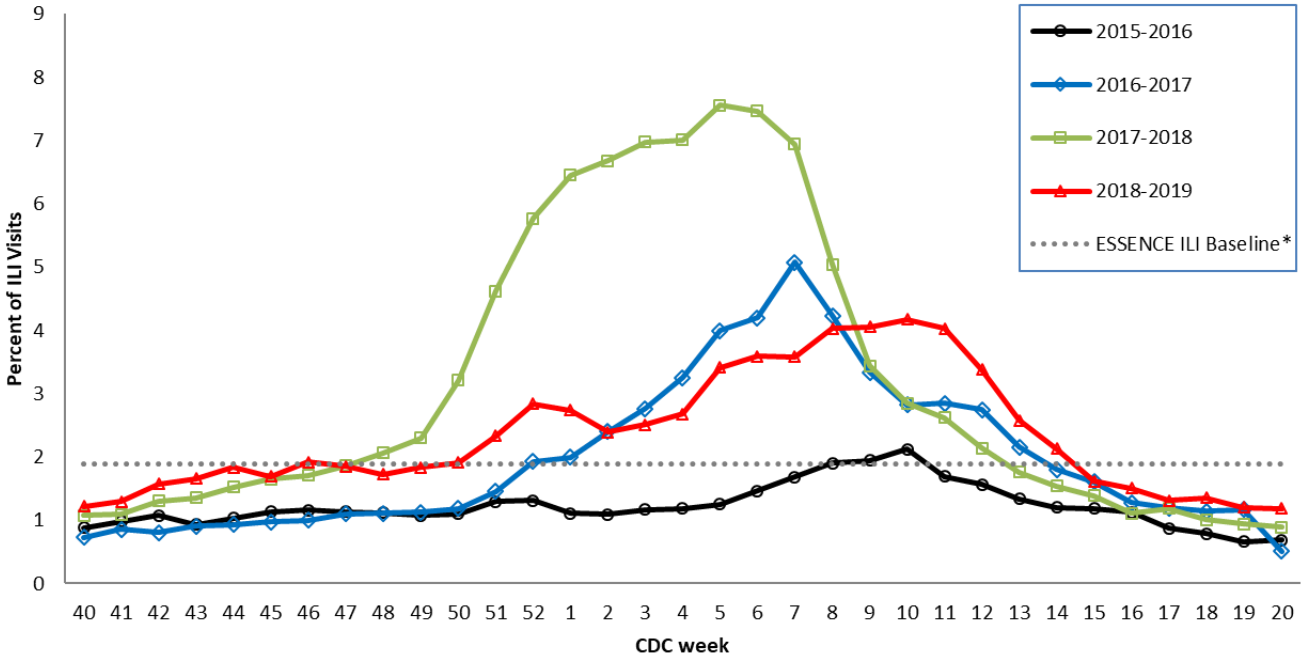
Figure 6. Season-to-Date PCR (+) Tests for Influenza in Missouri



Data Source: National Respiratory and Enteric Virus Surveillance System (NREVSS), Centers for Disease Control and Prevention (CDC).
2018-2019 season-to-date through the week ending May 18, 2019 (Week 20).

Figure 7. Percentage of Emergency Department (ED) Visits for Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, 2015-2019 Influenza Seasons*‡



*The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2015-17) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations. Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE version 1.20.

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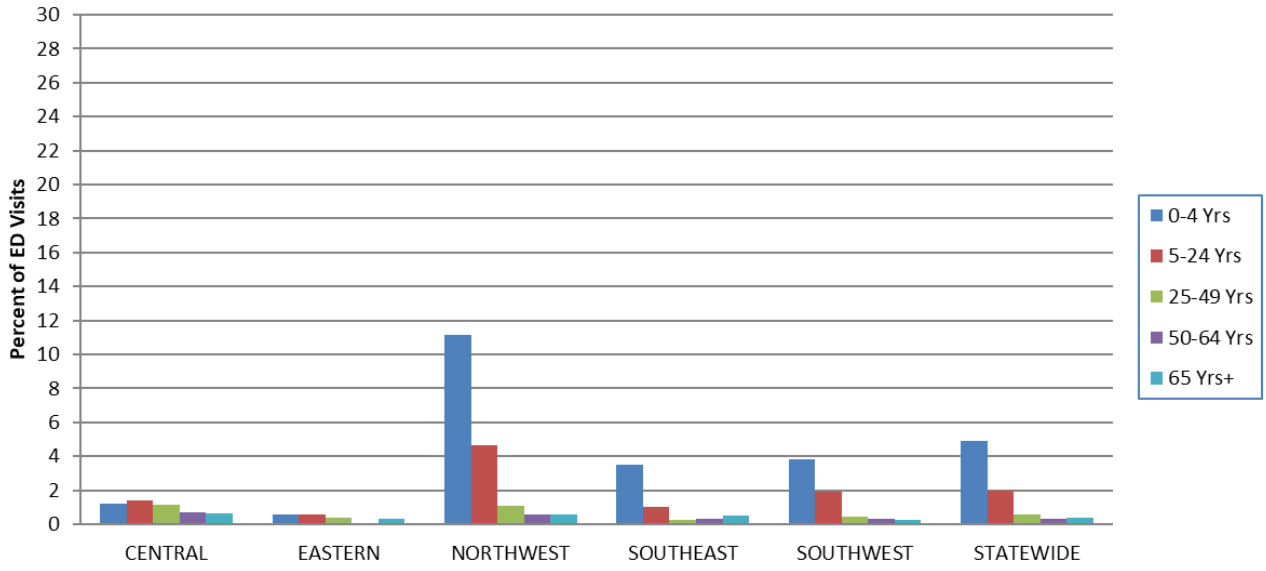

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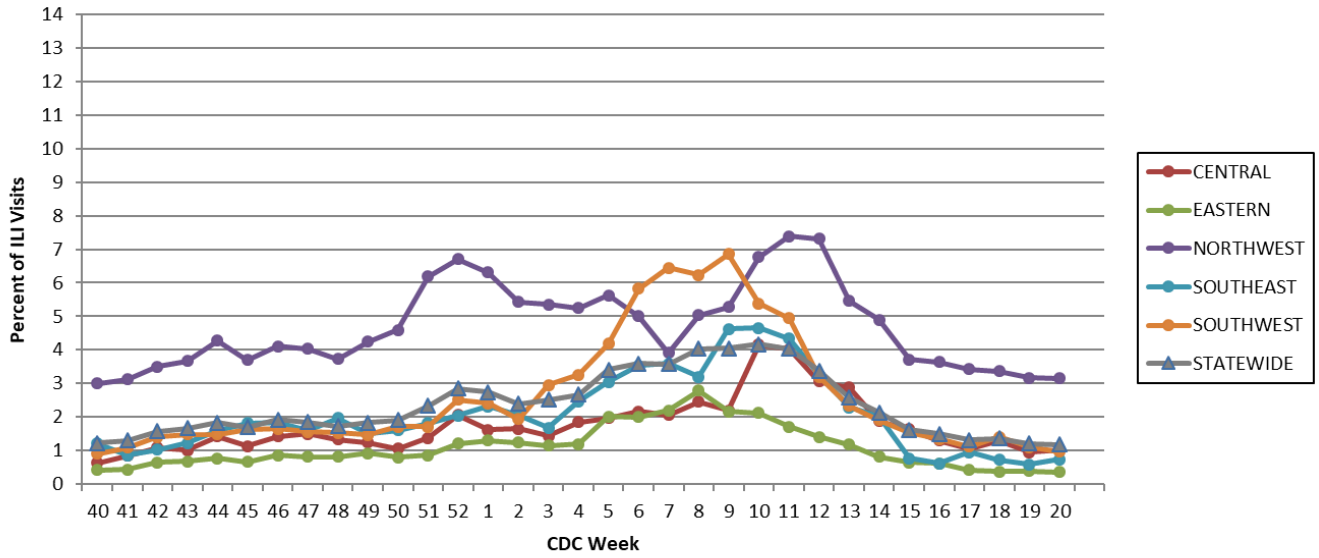

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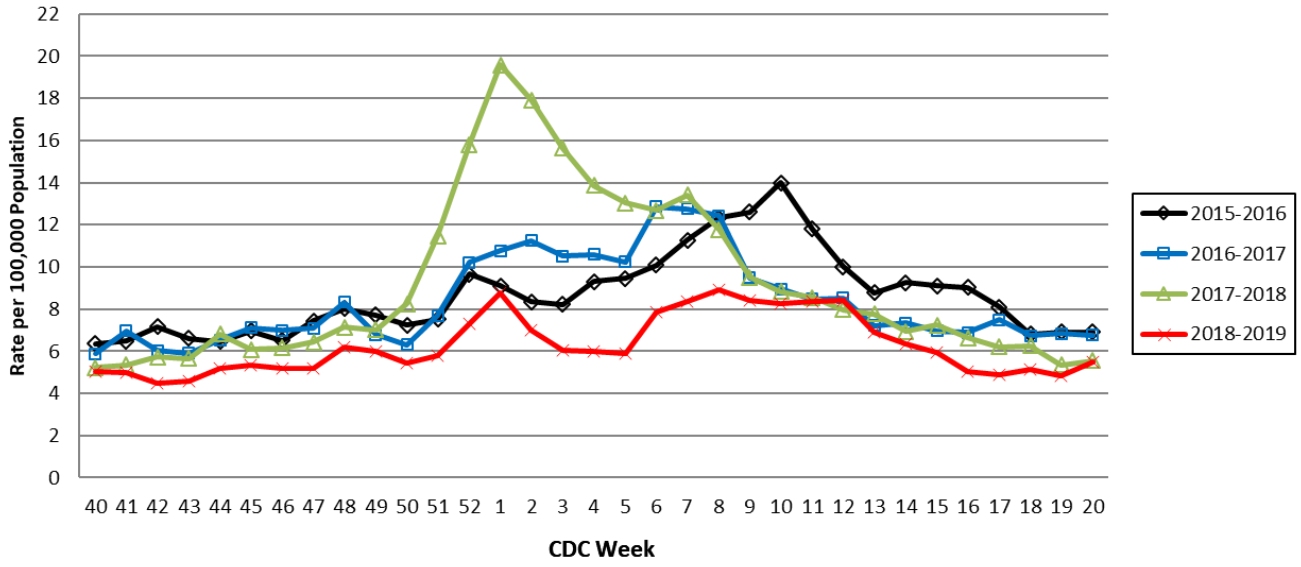
Figure 10. Weekly Rate of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Missouri Hospitals, 2015-2019 Influenza Seasons



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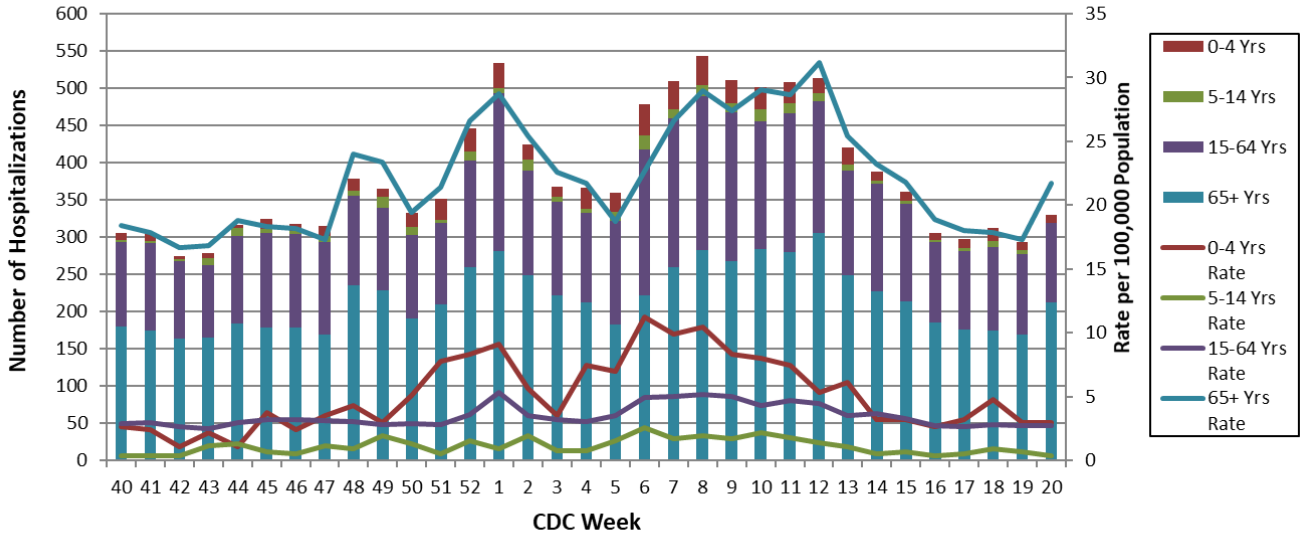
Population data from DHSS Population MICA 2016 (https://webapp01.dhss.mo.gov/MOPHIMS/QueryBuilder?qbc=PNM&q=1&m=1).

Figure 11. Number of Patients Hospitalized with Influenza and/or Pneumonia Syndromes in Participating Missouri Hospitals, by Age Group, Week 20, 2018-2019 Influenza Season



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https://www.cdc.gov/surveillance/nrevss/

World Health Organization: International Influenza Surveillance:
http://www.who.int/influenza/surveillance_monitoring/en/